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Dr. Norman F. Smith.

LANCASHIRE

IN CONCILIO CONSILIUM

COUNTY COUNCIL.

PREVENTION AND TREATMENT OF TUBERCULOSIS IN THE ADMINISTRATIVE COUNTY OF LANCASTER.

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Report of the Central Tuberculosis Officer
of the Lancashire County Council
for the Year 1934.

C. Tinling & Co. Ltd., Liverpool, London and Prescot.
1935.

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B.M.J.,
16.xi.35

Treatment of Tuberculosis in Lancashire

The place of the residential institution in the treatment of pulmonary tuberculosis is discussed by Dr. G. Lissant Cox in his annual report for 1934 as central tuberculosis officer of the Lancashire County Council. Residential treatment is the most expensive part of a tuberculosis scheme, and great care is taken in the first place to ensure accurate diagnosis. A thorough clinical examination at the dispensary, and especially the use there of a good *x*-ray plant, renders it certain that only cases of definite tuberculosis are placed on the register and afforded treatment. This saves much money by reducing the number of beds required for the treatment of patients. Dr. Cox believes that tuberculosis institutions for pulmonary disease should treat on one and the same site the good, the bad, and the intermediate case, often for a long time. To get rid of chronic and advanced cases does not help in the prevention and treatment of tuberculosis as a whole. Experience has shown that by the use of *x* rays and minor collapse therapy in tuberculosis institutions (not too big, situated near the patients' homes, superintended or attended by the tuberculosis officer, and taking all types of pulmonary cases) prevention and treatment go hand in hand, and the title given to the institution, whether hospital or sanatorium, is of little importance. Dr. Cox groups patients up to the age of 15 in three categories: children with tubercle bacilli in the sputum (indicating the adult type of infection) should, he thinks, be provided with separate accommodation at institutions for adult pulmonary cases; those with negative or no sputum should be treated at sanatorium schools; and children with indefinite symptoms, generally known as the pre-tuberculous type, should attend open-air schools provided by the local education authority. As regards duration of treatment, Dr. Cox states that the following principles have been adopted. (1) Patients who are responding to institutional treatment are given a prolonged stay (six months or over) so long as there is a likelihood of the disease becoming quiescent. For such patients to return home and to work before attaining quiescence is uneconomical because of the danger of a breakdown and all the good of past institutional treatment being wasted. (2) Patients, particularly the young adult group (aged 15 to 25), who have been given special forms of treatment such as artificial pneumothorax, phrenicectomy, thoracoplasty, and sanocrysin, are allowed a sufficient stay—up to six months, possibly—to show progress in response to treatment, and they are retained for as long as twelve months or longer if their condition warrants this. Those who have received artificial pneumothorax attend at the dispensaries for a continuation of the treatment. (3) Patients whose sputum has never been positive and who are not likely to make further progress or to require special treatment are allowed to return home at the end of two or three months' treatment. (4) Patients with positive sputum who are not likely to make further progress and whose home conditions are reasonably satisfactory are allowed to return home at the end of two or three months' treatment. When making recommendations for institutional treatment, tuberculosis officers bear in mind the questions: Is such treatment required to improve the patient's health? Is such treatment desirable to secure nursing care which could not otherwise be obtained at home? and Is it necessary to prescribe this treatment in order to prevent the spread of infection? Elsewhere in the report Dr. Lissant Cox states that the death rate in 1934 (0.46 per 1,000 of the population) was the lowest recorded for the county, and below the rate (0.63) for England and Wales.

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COUNTY TUBERCULOSIS COMMITTEE
(1935).

The Chairman of the County Council :
†Sir James T. Travis-Clegg, J.P., D.L.

The Vice-Chairman of the County Council :
*†Sir William Hodgson, J.P.

Chairman of Committee :
*†E. Boothman, Esq., J.P.

Vice-Chairman :
*Sir Thomas S. Tomlinson, J.P.

County Aldermen—

J. C. Beckitt, Esq., M.R.C.S., L.R.C.P., D.P.H.
A. S. Bury, Esq., J.P.
H. F. Jeffery, Esq., M.B., Ch.B., J.P.
*C. J. Trimble, C.B., C.M.G., L.R.C.P., D.P.H., J.P., D.L.

County Councillors—

L. Allen, Esq., J.P.
H. Bright, Esq.
*E. Clegg, Esq.
F. H. Dodd, Esq.
J. F. L. Formby, Esq., J.P.
W. T. Jackson, Esq., J.P.
T. E. Jesson, Esq., M.P.
*Rev. A. Kershaw, M.A.
W. J. Lucas, Esq., J.P., F.I.O.B.
*P. F. Mannix, Esq., M.D., M.Ch., B.A.O., J.P.
R. S. Robson, Esq., J.P.
*E. Tye, Esq.

*** Members of the Sanatorium and Hospital Sub-Committee.**
† County Aldermen.

MEDICAL AND NURSING STAFF OF THE TUBERCULOSIS DEPARTMENT, Oct. 1935

Central Tuberculosis Officer—G. Lissant Cox, M.A., M.D. (Camb.).

Staff of the Dispensary Areas and County Sanatoria and Hospitals.

Area No. 1. (Population 246,683).

(Lancaster, Morecambe and Heysham, Garstang Rural (part), Preston Rural, Walton-le-Dale, Chorley, and Horwich districts).

Consultant Tuberculosis Officer and Visiting Physician, Lancaster Pulmonary Hospital (36 beds)—G. H. Leigh, M.D., Ch.B., D.P.H. (Manch.).

Assistant Tuberculosis Officer—F. C. S. Bradbury, M.D., B.Ch., (Belfast), B.Hy., D.P.H. (Durham).

Area No. 2. (Population 333,881).

(Clitheroe, Colne, Nelson, Burnley Rural, Blackburn Rural, Accrington, Darwen, Haslingden, Rawtenstall, and Bacup districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Withnell Pulmonary Hospital (52 beds)—B. MacPhee, M.B., Ch.B. (Glas.), D.P.H. (Camb.).

Assistant Tuberculosis Officers—S. C. Adam, M.B., Ch.B. (Glas.), D.P.H. (Lond.); and W. Fettes, M.B., Ch.B., D.P.H. (Aberdeen) (2 days per week).

Area No. 3. (Population 367,448).

(Ramsbottom, Littleborough, Radcliffe, Heywood, Crompton, Prestwich, Middleton, Chadderton, Failsworth, Ashton-under-Lyne, Mossley, and Denton districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Wolstenholme Pulmonary Hospital (55 beds)—G. Fletcher, M.A., M.D., (Glas.), M.R.C.P. (Lond.), D.P.H. (Camb.).

Assistant Tuberculosis Officers — C. Berry, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P.S. (Glas.), D.P.H. (R.C.P.S.I.); and J. L. Armour, M.B., Ch.B. (Liverpool), M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Area No. 4. (Population 361,900).

(Westhoughton, Atherton, Farnworth, Leigh, Swinton and Pendlebury, Eccles, and Stretford districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Peel Hall Pulmonary Hospital (56 beds)—G. Jessel, M.A., M.D. (Oxon.), D.P.H. (Manch.).

Assistant Tuberculosis Officers—A. B. Jamieson, M.B., Ch.B. (Edin.); and H. J. Villers, L.R.C.P.I., L.R.C.S.I.

Area No. 5. (Population 263,686).

(West Lancashire Rural, Great Crosby, Waterloo-with-Seaforth, Newton-in-Makerfield, Whiston Rural, Warrington Rural, and Widnes districts).

Consultant Tuberculosis Officer and Visiting Medical Superintendent, Rufford Pulmonary Hospital (52 beds)—C. W. Laird, B.A., M.D. (Dublin), D.P.H. (Liverpool).

Assistant Tuberculosis Officers—C. H. Lilley, M.B., Ch.B. (St. Andrews), D.P.H. (Lond.); and W. Fettes, M.B., Ch.B., D.P.H. (Aberdeen) (2 days per week).

High Carley Sanatorium (118 beds), Oubas House Children's Sanatorium (21 beds), and Furness Dispensary Area (Population 38,174).

(Dalton-in-Furness, Grange-over-Sands, Ulverston, and Ulverston Rural districts).

Medical Superintendent and Consultant Tuberculosis Officer—G. Leggat, M.B., Ch.B., D.P.H. (Aberdeen).

Assistant Medical Superintendent—J. N. Whyte, M.D., B.Ch., B.A.O., D.P.H. (Belfast).

Elswick Sanatorium (70 beds) and Fylde Dispensary Area (Population 85,967).

(Fleetwood, Thornton Cleveleys, Lytham St. Annes, Fylde Rural, Garstang Rural (part), and Kirkham districts).

Medical Superintendent and Consultant Tuberculosis Officer—G. B. Charnock, L.R.C.P., L.R.C.S. (Edin.) L.R.F.P.S. (Glas.), D.P.H. (Liverpool).

Assistant Tuberculosis Officer—W. Fettes, M.B., Ch.B., D.P.H. (Aberdeen) (1½ days per week).

Wrightington Hospital (226 beds) and Wigan County Dispensary Area (Population 109,351).

(Ashton-in-Makerfield, Hindley, Ince-in-Makerfield, and Wigan Rural districts).

Medical Superintendent and Consultant Tuberculosis Officer—E. H. A. Pask, M.D. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Assistant Tuberculosis Officer—J. E. Wallace, M.D., Ch.B. (Liverpool), M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Assistant Medical Superintendent—E. H. W. Deane, M.B., B.S. (Melbourne).

Junior Assistant Medical Officer—J. Dobson, M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Chadderton Pulmonary Hospital (44 beds).

Visiting Medical Superintendent—E. T. Holden, M.B., Ch.B. (Birm.), M.R.C.S. (Eng.), L.R.C.P., D.P.H. (*Lond*).

Heath Charnock Pulmonary Hospital (34 beds).

Visiting Medical Superintendent and Medical Officer to the Chorley Joint Hospital Board—J. Rigby, M.B., Ch.B., D.P.H. (Manch).

Lancaster, Withnell, Wolstenholme, Peel Hall, and Rufford Pulmonary Hospitals.

The Consultant Tuberculosis Officers of Dispensary Areas Nos. 1, 2, 3, 4 and 5, respectively, are the visiting Medical Superintendents of these Hospitals, as mentioned in foregoing list of staff.

Consulting Surgical Staff.

T. P. McMurray, M.Ch., F.R.C.S. (Edin.), and
Harry Platt, M.D. (Manch.), M.S. (Lond.), F.R.C.S. (Eng.),
Visiting Consulting Orthopædic Surgeons, Wrightington Hospital.

H. H. Bywater, M.D. (Manch.), D.Ch.O. (Liverpool), F.R.C.S. (Edin.),
Visiting Consulting Ophthalmic Surgeon, Wrightington Hospital.

C. A. Wells, M.B., Ch.B. (Liverpool), F.R.C.S. (Eng.), L.R.C.P. (Lond.),
Visiting Consulting Urological Surgeon, Wrightington Hospital.

H. Morriston Davies, M.D., M.Ch. (Camb.), F.R.C.S. (Eng.),
Visiting Consulting Chest Surgeon, Elswick and High Carley Sanatoria, and Peel Hall Pulmonary Hospital.

J. Halton, M.B., Ch.B. (Liverpool),
Visiting Anæsthetist, High Carley Sanatorium.

Visiting Dental Surgeons.

High Carley and Oubas House Sanatoria—A. Miller, L.D.S. (R.C.S., Eng.).

Elswick Sanatorium—R. D. Allison, L.R.C.P., L.R.C.S. (Edin.), L.R.F.P.S. (Glas.), L.D.S. (R.C.S., Edin.).

Wrightington Hospital—J. J. Ward, L.D.S. (R.C.S., Eng.).

Matrons.

High Carley and Oubas House Sanatoria	E. Woosey.
Elswick Sanatorium	A. Jones.
Chadderton Pulmonary Hospital	I. Felstead.
Heath Charnock Pulmonary Hospital	H. Sinclair.
Lancaster Pulmonary Hospital	E. Burrows.
Peel Hall Pulmonary Hospital	E. Simmons.
Rufford Pulmonary Hospital	S. Holmes.
Withnell Pulmonary Hospital	D. Willman.
Wolstenholme Pulmonary Hospital	E. G. Glass.
Wrightington Hospital	E. Moseley.

Tuberculosis Health Visitors.

Area No. 1.—L. Walker*, J. Skelcher, F. D. Abbott*, G. M. Hunter.

Area No. 2.—R. Lambert*, A. Munro*, M. Duggan*, L. F. Norwood, E. Watterson, H. M. Alcock*.

Area No. 3.—M. A. Potter, H. Dewsnap*, I. F. Macdonald*, C. Guilfoy*, A. Flynn*, W. Swift, M. Sherwen.

Area No. 4.—M. B. Jones, H. M. Shakespeare*, F. G. Smith, A. Dickinson, I. M. Corfield, K. Blakemore, M. Gibson*.

Area No. 5.—E. Walch, M. J. Wilson*, A. Duncan, L. Farquhar*, M. J. McKeown*.

Furness Area.—E. A. Duston.

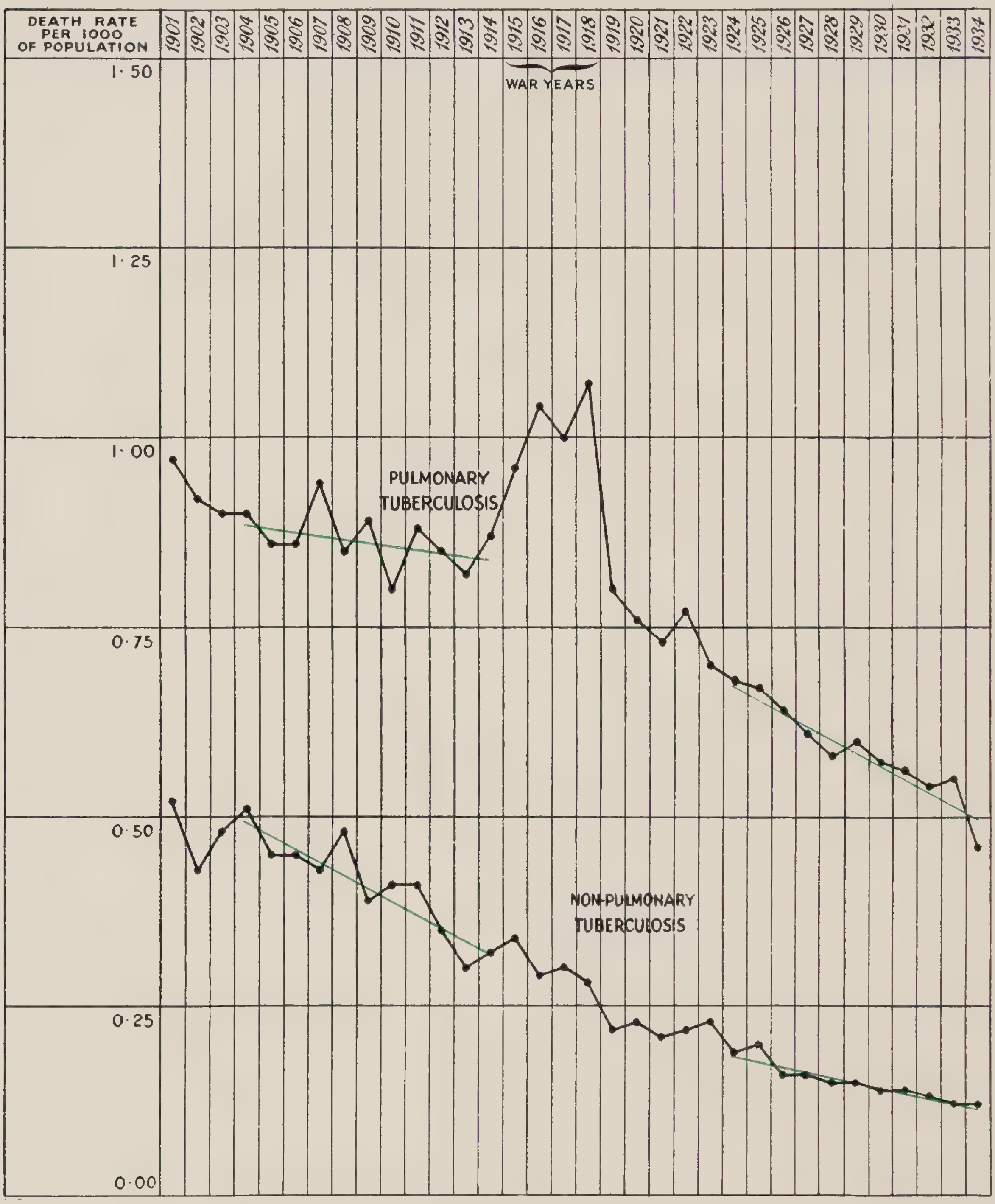
Fylde Area.—A. Tweedy*.

Wigan County Area.—E. Walters*, M. J. Evans.

* Possesses a health visitor's or sanitary certificate.

ADMINISTRATIVE COUNTY OF LANCASTER.

Chart showing (*a*) the death-rates per 1,000 of the population from Pulmonary and Non-Pulmonary Tuberculosis, 1901–34, and (*b*) " lines of best fit " (in green) applied to the rates for the two eleven-year periods 1904–14 and 1924–34.



For explanatory note see page opposite.

The " line of best fit," that is, the charted rates in the eleven-year period reduced mathematically to a straight line, indicating the trend of the death-rates during the particular period dealt with, has been calculated by means of the formula—

$$Y = \frac{\Sigma y}{n} + \frac{\Sigma xy}{\Sigma x^2}x$$

where Y is the straight line value of y required, x the year, y the rate, and n the number of observations.

REPORT
OF THE
CENTRAL TUBERCULOSIS OFFICER
FOR THE YEAR 1934.

To the Chairman and Members of the
Lancashire County Council.

LADIES AND GENTLEMEN,

I have the honour to submit the twenty-first annual report on the work of the tuberculosis department, and in this introductory portion will give briefly some of the principal features of the work in 1934.

Tuberculosis incidence and mortality.

The death-rate from pulmonary tuberculosis for 1934 proved to be by far the lowest recorded in the Administrative County. Since 1923 there has been a continuous decline in the death-rates from pulmonary tuberculosis interrupted only by the years 1929 and 1933, when influenza epidemics caused a temporary increase.

The frontispiece (opposite) shows the death-rates from pulmonary tuberculosis and non-pulmonary tuberculosis in the Administrative County since 1901. In order to show the trend of the rates during the past eleven years compared with the eleven years 1904–14—that is 20 years ago—I have had calculated the " lines of best fit " for these periods. These lines of best fit, which are the rates smoothed out mathematically into a straight line (coloured green on chart), show that the decline in pulmonary tuberculosis during the past eleven years is much greater than 20 years ago; in fact, the chart shows that for the period 1904–14 the pulmonary tuberculosis death-rate was almost stationary. For non-pulmonary tuberculosis with the greatly reduced death-rates, the slope is less pronounced.

Taking pulmonary and non-pulmonary tuberculosis together, the County mortality in 1934 was 49 per cent. of the rate for 1914, representing over 1,000 fewer deaths. In this brief way it is possible to indicate the progress made in combating the disease.

The number of new cases of pulmonary tuberculosis further declined in 1934, thus continuing the yearly fall which has occurred since 1924.

The following are the death-rates in 1934 from tuberculosis (all forms) per 1,000 of the population in the Administrative County, in counties with a population in the region of 1,000,000, and in England and Wales :—Lancashire, 0·59 ; Durham, 0·87 ; Essex, 0·59 ; Kent, 0·70 ; Middlesex, 0·69 ; Surrey, 0·57 ; West Riding of Yorkshire, 0·55 ; and England and Wales, 0·76.

Chairmanship of the Committee.

County Alderman Dr. C. J. Trimble in March, 1935, relinquished the Chairmanship of the County Tuberculosis Committee after holding the position since 1926. He has been a member of the Committee since its inception in February, 1914, and was Vice-Chairman from 1921 to 1926. The Committee have placed on record to the County Council their high appreciation of the valuable services Dr. Trimble has for so many years rendered in connection with the County scheme for the prevention and treatment of tuberculosis. On behalf of the medical, nursing, and clerical staffs, I beg to express their appreciation of the unvarying courtesy, consideration, and support which Dr. Trimble has always given to them. Dr. Trimble will continue to serve as a member of the Committee.

County Alderman E. Boothman has been appointed Chairman. He also was a member of the original Committee in February, 1914, and had been Vice-Chairman since December, 1926.

Surgical treatment of pulmonary tuberculosis.

The outlook for many patients suffering from pulmonary tuberculosis has been changed in recent years by the application of major and minor surgical methods of treatment. The principal operations are :—Artificial pneumothorax, that is, collapse of a lung or part of it by the injection of air through a needle with the result that the part which is diseased is put to rest ; phrenicectomy, or phrenic crushing ; and thoracoplasty.

Mr. Morriston Davies is the consulting chest surgeon, and pays periodical visits to the High Carley Sanatorium, the Elswick Sanatorium, and the Peel Hall Pulmonary Hospital.

The following statement shows the number of living patients on the 31st December, 1934, who had undergone surgical treatment for their chest condition :—Artificial pneumothorax, 347 ; phrenicectomy or phrenic crushing (with, in some cases, artificial pneumothorax), 179 ; thoracoplasty, 4 ; division of adhesions, 2 ; scalenectomy, 1.

X-ray examinations.

The provision of x-ray plants for the diagnosis and treatment of cases of tuberculosis is as essential as the provision of the stethoscope and thermometer. The use made of x-rays in this County in 1934 is shown by the following figures :—At County dispensaries, 10,137 x-ray examinations were made, and 8,340 at County sanatoria and hospitals.

Visits by Delegates to N.A.P.T. Conference at Southport to County dispensaries and hospitals.

The annual conference of the National Association for the Prevention of Tuberculosis was held at Southport on the 27th to the 29th June, 1935. The County Council co-operated with the Southport Corporation by arranging tours for the delegates to certain County dispensaries and hospitals to show the work which was being done. The delegates, who came from the British Isles and abroad, extended to four parties and each visited a dispensary and an institution. We were honoured by the following numbers of visitors to the institutions named :—Accrington Dispensary 47, Chorley Dispensary, 29, Eccles Dispensary 12, Wigan Dispensary 22, Peel Hall Pulmonary Hospital 12, Rufford Pulmonary Hospital 20, Withnell Pulmonary Hospital 75, and Wrightington Hospital 100. The visits to the Chorley Dispensary, Eccles Dispensary, and Peel Hall Hospital were arranged to meet the unexpected number of delegates. The delegates were addressed by the Chairman and Vice-Chairman of the County Tuberculosis Committee, the several consultant tuberculosis officers, and myself.

Education.

The tuberculosis officers from time to time give lectures on tuberculosis. In January, 1935, this educational propaganda was assisted by Dr. Harley Williams, the Medical Commissioner of the National Association for the Prevention of Tuberculosis, who addressed 17 meetings in nine towns and villages in the Fylde and Chorley districts. The addresses were given to older scholars in the afternoon, and to adults in the evening. The lectures were illustrated by cinematograph films, were well attended and appreciated. Further arrangements have been made for Dr. Harley Williams to give a series of lectures during October, 1935, to older school children and adults in the following towns :—Accrington, Nelson, Darwen, Colne, Haslingden, Rawtenstall, Bacup, Ashton-under-Lyne, Radcliffe, and Shaw.

Special articles by medical staff.

The following special articles by members of the medical staff are printed in this report :—

A record of 50 Autopsies Performed at Wrightington Hospital, by Dr. E. H. Allon Pask (pages 13 to 18).

Paraplegia in Pott's Disease, by Dr. E. H. Allon Pask (pages 104 and 105).

Hydnocarpates in the Treatment of Lupus Vulgaris, by Dr. J. Edgar Wallace (pages 19 and 20).

Culture of Tubercle Bacilli, by Dr. E. H. W. Deane (page 101).

Retirement of Dr. James Wood.

Dr. James Wood, who had been medical superintendent since the opening of the Chadderton Pulmonary Hospital in October, 1919, resigned on medical grounds on the 31st October, 1934. The County Tuberculosis Committee have recorded to the County Council their regret at his retirement and their appreciation of his conscientious and satisfactory service.

Dr. E. T. Holden was appointed medical superintendent in his place—temporarily from the 19th March, 1934, and permanently from the 1st January, 1935.

Death of Dr. John W. Rigby.

It is with regret that I have to record the death on the 24th February, 1935, of John W. Rigby, M.R.C.S.(Eng.), L.R.C.P.(Lond.), the medical superintendent of the Heath Charnock Pulmonary Hospital and medical officer to the Chorley Joint Hospital Board. Dr. Rigby commenced his duties in 1919, and held the appointment to the time of his death. The deceased gave valuable service in the treatment of tuberculosis.

Dr. John Rigby was appointed by the Joint Hospital Board to fill the vacancy.

Extent and cost of County scheme.

The tuberculosis scheme covers the whole of the Administrative County, population 1,807,090 and acreage 1,038,480. The average number of beds in use is 966. There are 24 tuberculosis dispensaries owned or rented, and a total of 7,447 definite cases on the dispensary registers. The gross expenditure on tuberculosis services for 1935–36 is estimated at £195,742, less £6,160 income from various sources.

Towards the expenditure there is now an amount included in the General Exchequer Grant receivable under the Local Government Act, 1929; it is not specifically allocated to the tuberculosis service but is a general credit to the County Fund. Previous to the passing of the Act the Government made an annual grant based upon 50 per cent. of the net approved expenditure; for 1928–29 their grant amounted to £74,105.

Progress and future requirements in the tuberculosis scheme.

Below is a statement of the principal improvements which have been carried out at dispensaries, sanatoria and pulmonary hospitals; also included are three dispensaries where better accommodation is required.

Widnes Dispensary. The existing dispensary accommodation is insufficient for present requirements, and negotiations have been continued with the Widnes Corporation for them to include in their proposed new health clinic and offices a wing to serve as a tuberculosis dispensary. The borough surveyor is preparing an estimate of the cost.

Ashton-under-Lyne Dispensary. The premises, Boston House, Warrington Street, Ashton-under-Lyne, are inadequate for present needs. The County Council in August, 1935, decided to purchase a plot of land in Lees Street, Ashton-under-Lyne, and to erect thereon dispensary premises at an estimated cost of £6,790.

Oldham Dispensary. The County Council in August, 1935, decided to purchase a site in Brook Street, Chadderton, on which to erect at an estimated cost of £1,616, a one-storey dispensary to replace the dispensary premises, 25 Barker Street, Oldham, occupied jointly with the Oldham Corporation.

Chorley Dispensary. An x-ray apparatus was installed in 1935, and has greatly improved the x-ray facilities for the southern portion of Dispensary Area No. 1.

Lancaster Pulmonary Hospital. The tuberculosis block at the new Isolation Hospital of the Lancaster and District Joint Hospital Board was opened for the reception of patients on the 11th February, 1935. The block is in the medical charge of the consultant tuberculosis officer for Dispensary Area No. 1, and it accommodates patients from north Lancashire.

Springfield Sanatorium. By an agreement with the Rochdale Corporation 18 of the 36 beds provided at the new sanatorium are available for County adult female patients suffering from pulmonary tuberculosis. The first County patient was admitted on the 9th November, 1934.

Wolstenholme Pulmonary Hospital. The work of re-organising this hospital was completed in October, 1935. New quarters for the patients have been built, and the Hall has been adapted for housing the nursing and domestic staffs and for other administrative purposes.

Aitken Sanatorium. The Bury Joint Hospital Board have made considerable progress in their scheme for improving the accommodation, facilities for treatment (including x-ray), and maintenance of patients at their Aitken Sanatorium, Holcombe Brook. The new scheme involves an expenditure of about £19,000. The County Council reserve 50 beds on lease until the 31st October, 1960.

Chadderton Pulmonary Hospital. Improvements at this hospital were completed towards the end of 1934, and comprise x-ray apparatus, dark room, and treatment room.

Co-operation with medical practitioners, sanitary authorities, and health officials.

The results of the tuberculosis scheme would be very different if the relations with the medical practitioners in the County, together with the sanitary authorities and their medical officers and sanitary inspectors, had not been of the most cordial and satisfactory character. I take this opportunity of acknowledging such co-operation from these sources. It is very satisfactory that 90 per cent. of new cases were sent *before notification* to the tuberculosis officers for an opinion as to diagnosis or treatment.

I have again to thank my medical colleagues and the nursing and clerical staffs for continued help. I have had very valuable help from my principal clerk, Mr. H. F. Hughes, especially in preparing this report, and have, in addition, to thank the public health department for furnishing certain statistics on notifications and deaths.

I am,

Your obedient Servant,

G. LISSANT COX,

Central Tuberculosis Officer.

County Offices, Preston.
10*th October*, 1935.

I.—TUBERCULOSIS INCIDENCE AND MORTALITY IN 1934.

The principal features of tuberculosis incidence and mortality in 1934 in the Administrative County, which contains an estimated population of 1,807,090, are as follow :—

1. The death-rate (0·46 per 1,000 of the population) from pulmonary tuberculosis in the County is the lowest on record, and continues below the pulmonary rate (0·63) for England and Wales.

2. The number of new pulmonary cases reported in 1934 is again the lowest on record ; each year since 1924 has shown a reduction, varying from 6 to 148, in the number of new cases. Comparing 1924 and 1934, the total reduction in the new pulmonary cases is 686 or 33·6 per cent.

3. The death-rate (0·12 per 1,000 of the population) from non-pulmonary tuberculosis remains the same as in 1933. It is now much less than one-half of the rate recorded in 1914. The rate for England and Wales is also 0·12 in 1934.

4. There is a small increase of 9 cases in the number of new cases of non-pulmonary tuberculosis reported in 1934 compared with 1933.

5. The saving in human life by the reduction in the County death-rate from all forms of tuberculosis is considerable ; for example, if the death-rate for 1934 had been the same as in 1914 there would have been 2,153 deaths instead of the actual number of 1,079—a difference of 1,074.

6. Pulmonary tuberculosis is again more prevalent among males than females in regard to both cases and deaths. Allowing for the difference in the population of the sexes, for every 100 deaths of females in 1934 there were 143 deaths of males.

7. For females, for the first occasion since 1921 the age-group 25–35 years has the largest number of deaths from pulmonary tuberculosis (see Table 3, page 6). For many years the greatest mortality had occurred in the age-group 15–25, but the deaths among these young females has happily been declining and to an extent not shared by England and Wales. This is the age-group which has shown the least response to treatment.

8. With regard to non-pulmonary tuberculosis, the most striking decline has occurred in the age-group 0–5 years ; in 1914 the deaths in this group totalled 286, whereas in 1934 there were only 59.

NEW CASES OF TUBERCULOSIS.

The following Table 1 shows since 1918 the total number of new cases of pulmonary and non-pulmonary tuberculosis reported in each year; the case-rate for pulmonary tuberculosis is also given :—

Year	Pulmonary tuberculosis				Non-pulmonary tuberculosis		
	Cases notified (*i.e.*, during life)	Cases reported at time of death only	Total known cases	Case-rate per 1,000 of population	Cases notified (*i.e.*, during life)	Cases reported at time of death only	Total known cases
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1918	2,534	303	2,837	1·64	885	137	1,022
1919	2,105	221	2,326	1·34	847	104	951
1920	2,084	177	2,261	1·30	968	122	1,090
1921	2,044	135	2,179	1·23	899	96	995
1922	1,863	105	1,968	1·11	956	83	1,039
1923	1,937	85	2,022	1·13	1,188	74	1,262
1924	1,972	64	2,036	1·14	1,120	65	1,185
1925	1,846	67	1,913	1·07	1,027	57	1,084
1926	1,828	58	1,886	1·05	953	32	985
1927	1,794	54	1,848	1·02	1,045	42	1,087
1928	1,660	56	1,716	0·94	956	51	1,007
1929	1,517	62	1,579	0·87	913	61	974
1930	1,527	46	1,573	0·87	982	61	1,043
1931	1,460	61	1,521	0·84	862	51	913
1932	1,477	37	1,514	0·83	825	28	853
1933	1,453	45	1,498	0·82	780	31	811
1934	**1,315**	**35**	**1,350**	**0·74**	**774**	**46**	**820**

The decline—continuous since 1924—in the new cases of pulmonary tuberculosis is seen in column (4) of the above table. The improvement has taken place mainly among the males in age-groups 0–5 and 5–15 and females 5–15, 35–45, and 45–55.

With regard to non-pulmonary tuberculosis, the number of cases notified are now showing a downward trend, but it must be remembered that notification was undoubtedly influenced by the developments in the County scheme between 1922 and 1927, such as the establishment of artificial light centres at the dispensaries. Furthermore, in the earlier years it is known that notification of non-pulmonary cases was not uniformly carried out by the practitioners, as in those years the treatment provided under the County scheme was not so extensive as at the present time.

The notifications referred to in columns (2) and (6) are dealt with further in Appendix II, where folding Tables B, C, and D are inserted.

DEATHS AND DEATH-RATES FROM TUBERCULOSIS.

Table 2 below shows the number of deaths registered and the death-rates recorded during the years 1913 to 1934 in the Administrative County :—

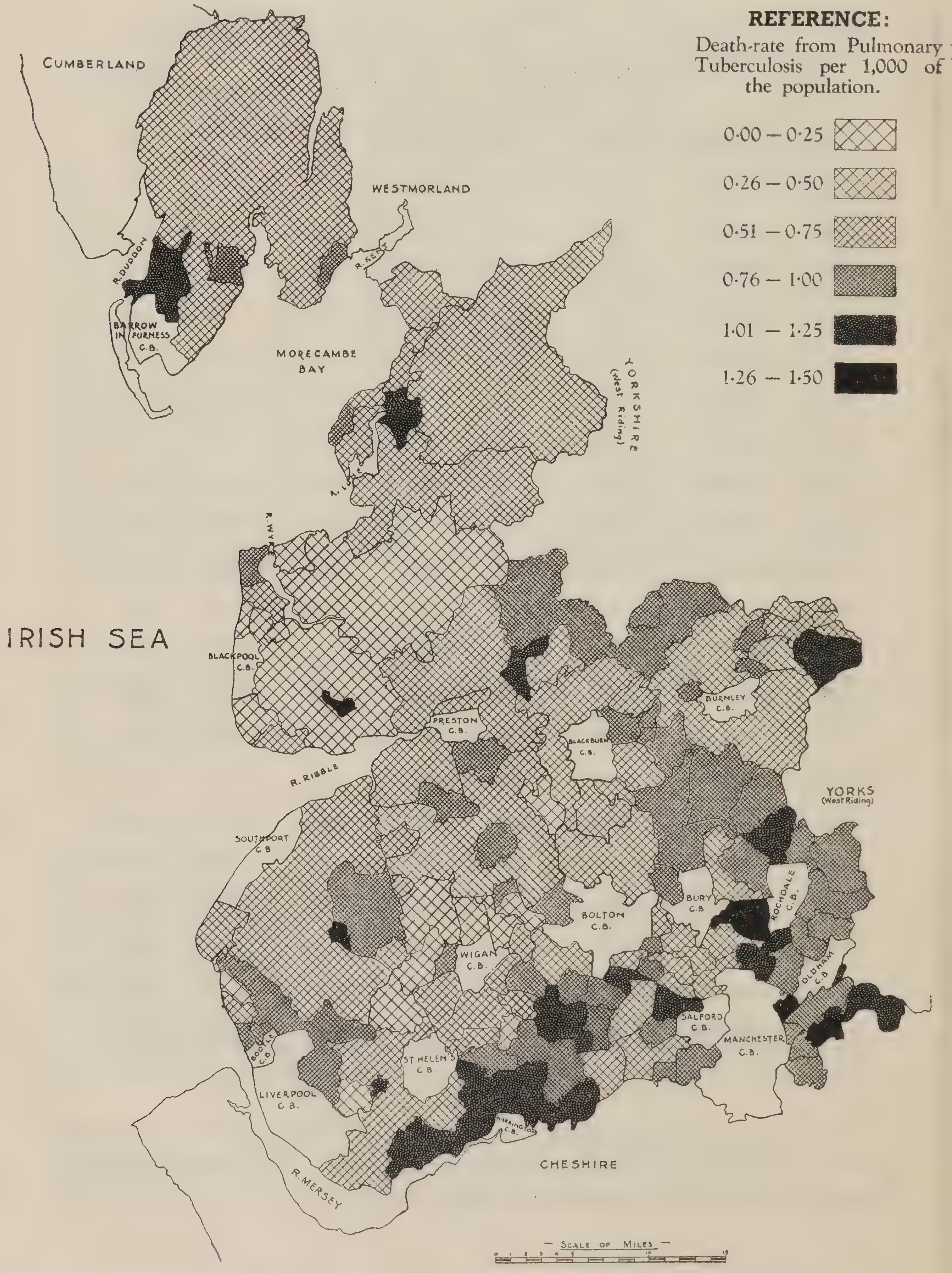
Year	Population.	Deaths.			Death-rate per 1,000 of population.		
		Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)	Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms)
1913	1,749,659	1,441	527	1,968	0·82	0·30	1·12
1914	1,748,289	1,523	572	2,095	0·87	0·32	1·19
1915	1,666,488	1,614	555	2,169	0·96	0·34	1·30
1916	1,620,062	1,685	471	2,156	1·04	0·29	1·33
1917	1,568,656	1,584	466	2,050	1·00	0·30	1·30
1918	1,537,951	1,652	435	2,087	1·07	0·28	1·35
1919	1,662,716	1,339	358	1,697	0·80	0·22	1·02
1920	1,728,967	1,323	396	1,719	0·76	0·23	0·99
1921	1,758,738	1,301	376	1,677	0·73	0·21	0·95
1922	1,766,027	1,362	389	1,751	0·77	0·22	0·99
1923	1,772,658	1,250	412	1,662	0·70	0·23	0·93
1924	1,782,800	1,215	339	1,554	0·68	0·19	0·87
1925	1,785,500	1,205	361	1,566	0·67	0·20	0·87
1926	1,788,500	1,158	286	1,444	0·64	0·16	0·80
1927	1,800,300	1,105	296	1,401	0·61	0·16	0·77
1928	1,811,000	1,066	287	1,353	0·58	0·15	0·74
1929	1,811,700	1,102	279	1,381	0·60	0·15	0·76
1930	1,806,960	1,046	253	1,299	0·57	0·14	0·71
1931	1,804,400	1,021	266	1,287	0·56	0·14	0·71
1932	1,802,700	975	238	1,213	0·54	0·13	0·67
1933	1,802,730*	1,010	232	1,242	0·55	0·12	0·68
1934	**1,807,090***	**848**	**231**	**1,079**	**0·46**	**0·12**	**0·59**

*Consequent on the alteration of boundaries, the death-rates have been calculated on the following adjusted populations :—1933, 1,807,800 ; 1934, 1,809,597.

In Appendix I are given the tuberculosis deaths and death-rates in the urban and rural sanitary districts in the Administrative County, and in the dispensary areas.

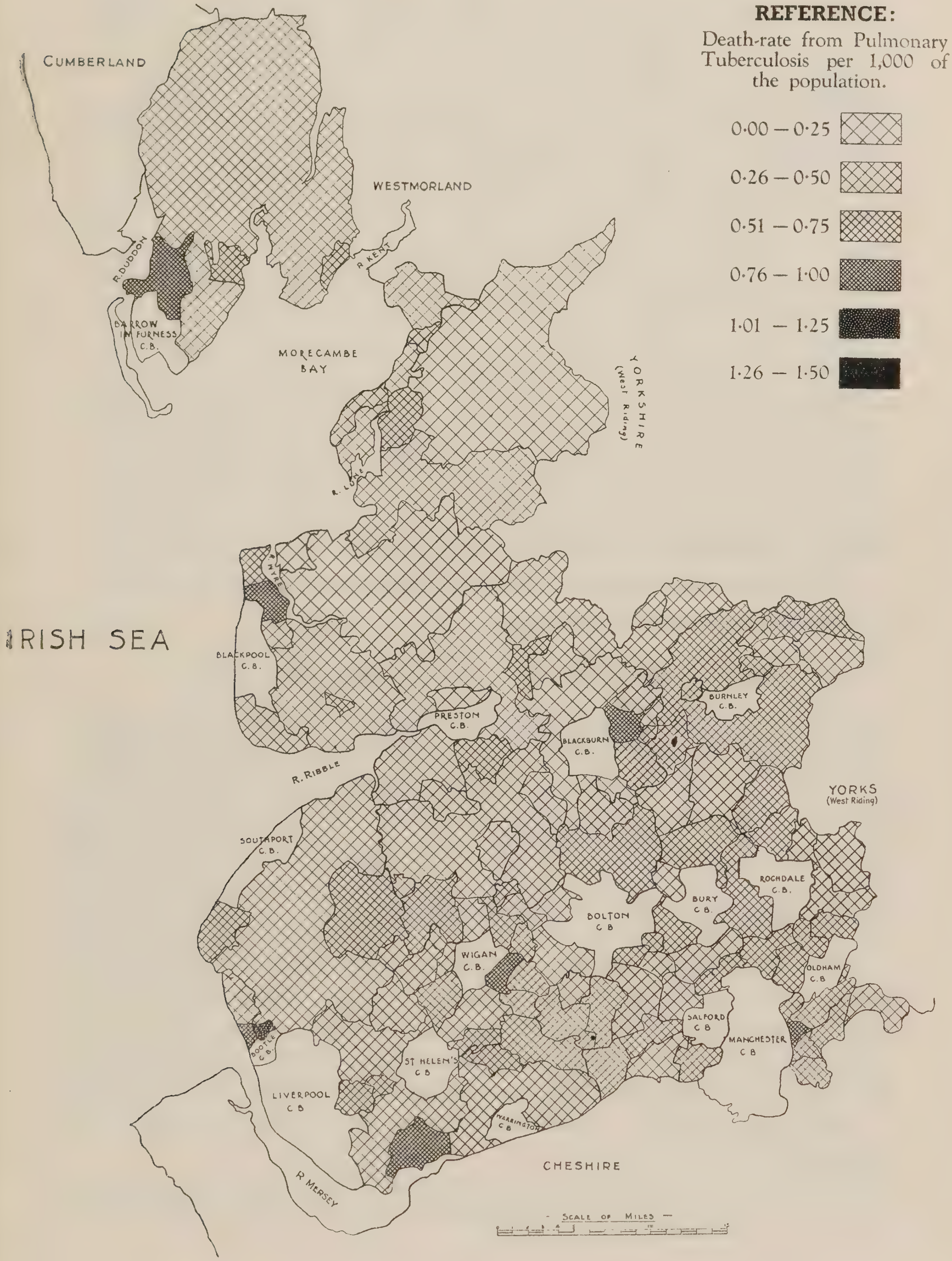
Two maps are here reproduced to show the improvement which has taken place in the death-rates from Pulmonary Tuberculosis in the County sanitary districts by comparing (a) the five-year period 1910–1914 with (b) the five-year period 1930–1934.

(a) *Death-rates from Pulmonary Tuberculosis per* 1,000 *of the population : Average for the five years* 1910–1914.



Average death-rate from pulmonary tuberculosis in Administrative County for five-year period 1910–1914 ... ... 0·84

(b) *Death-rates from Pulmonary Tuberculosis per* 1,000 *of the population : Average for the five years* 1930–1934.



Average death-rate from pulmonary tuberculosis in Administrative County for five-year period 1930–1934 ... ... 0·53

The following Table 3 shows the deaths recorded from pulmonary tuberculosis in 1934 and the preceding 13 years analysed according to sex and age :—

Period	Estimated sex population	Pulmonary deaths in various age-groups									Death-rate per 1,000 of sex population
		0 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total	
Males.											
1921–25 (average)	841,030	9	15	120	131	151	153	83	26	688	0·81
1926–30 (average)	856,920	4	9	107	111	133	130	79	27	600	0·70
1931	858,023	6	11	99	126	120	142	80	29	613	0·71
1932	856,733	4	6	95	111	99	119	90	16	540	0·63
1933	859,156	1	8	90	108	119	125	92	30	573	0·66
1934	860,010	4	3	54	100	90	114	81	33	479	0·55
Females.											
1921–25 (average)	929,614	8	26	172	145	104	69	37	17	578	0·62
1926–30 (average)	946,771	4	18	155	133	81	49	37	18	495	0·52
1931	946,377	2	10	129	95	75	49	31	17	408	0·43
1932	945,967	1	18	121	113	98	34	35	15	435	0·45
1933	948,644	—	16	126	125	69	49	29	23	437	0·46
1934	949,587	4	10	107	121	57	27	30	13	369	0·38

The decline in the deaths from pulmonary tuberculosis is shared by both the males and the females.

DEATHS FROM NON-PULMONARY TUBERCULOSIS.

The mortality from non-pulmonary tuberculosis in 1934 is greatest among young children, aged 0 to 5, and thereafter declining steadily up to age 65. The actual numbers of children dying each year from this form of the disease have greatly diminished. This decline is due to segregation and supervision of the adult pulmonary cases, social measures, the safeguarding of the milk supply, and the successful modern methods of treatment of children with non-pulmonary disease.

The classification of the deaths in 1934 from non-pulmonary tuberculosis, according to part affected, is as follows :—Vertebral column, 31 ; other bones and joints, 14 ; intestines and peritoneum, 42 ; central nervous system, 92 ; disseminated, 31 ; genito-urinary, 10 ; lymphatic system, 5 ; skin and subcutaneous tissue, 5 ; adrenals, 1 ; total 231 (adults, males 62, females 66 ; children, males 47, females 56).

HOW MAY THE CHILD BE SAFEGUARDED AGAINST HUMAN INFECTION ?*

Introduction.

How do we know that children are infected by the tubercle bacillus ? We can tell by post-mortem records, *e.g.*, the pathological and bacteriological work of Dr. Blacklock, of Glasgow[1] ; secondly, if less accurately, by skin tests, the work of Von Pirquet, Mantoux, or recently Dr. D'Arcy Hart[2]. Does it matter if a child is infected ? We believe, under urban conditions, nearly every child at some time is infected, but relatively few develop tuberculous disease as children, even when we include non-pulmonary disease. In England and Wales, in 1933, there was a population of 9,532,900 children under the age of 15 years, and on the dispensary registers there were no less than 55,267 children suffering from all forms of tuberculosis (pulmonary 22,910, non-pulmonary 32,357). Thus, 0·57 per cent. of the child population were suffering from tuberculous disease. The seriousness and magnitude of the problem is at once made clear when we consider that over 3,400 children die every year from tuberculous disease in England and Wales.

Because infection may thus lead to disease, infection is of great importance. Blacklock's work showed that human infection in children is chiefly air-borne and produces disease in the thorax, and may be contrasted with bovine infection, which is alimentary in origin. For diagnosis in the living child we use skin tests and x-rays, symptoms, physical examination. But our standards vary ; many believed a little while ago that nearly every root shadow shown by the x-rays was evidence of disease ; we know better now. Sometimes there are vague symptoms and abnormal signs at a physical examination and the child is said to be pre-tuberculous—whatever this may mean. It is tempting to believe that the sub-standard child compared with a normal child will not only be infected, but will succumb to tuberculous disease either as a child or later as an adult. This does not appear to happen. A special survey was made by the dispensary staff in Lancashire[3] of 3,556 consecutive case-sheets of young adults, aged 15 to 25, diagnosed by the tuberculosis officers as suffering from tuberculosis during the years 1927-33 ; we were able to ascertain whether any of these young adults had been examined by a tuberculosis officer in Lancashire or other area and had been rejected during childhood as non-tuberculous. The result of the investigation showed that of the 3,556 young adults who came on our dispensary registers as definite cases of tuberculosis in the years stated, only 30, or 0·84 per cent., had been rejected in childhood as not suffering from pulmonary tuberculosis, or, as a matter of fact, tuberculosis of any form. Even these 30 rejected cases were not necessarily suffering from tuberculosis when examined in childhood, for some of them were bound to be subjected in the ordinary hazard of life to infection from existing cases.

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* Opening paper read by Dr. G. Lissant Cox at the Annual Conference of the National Association for the Prevention of Tuberculosis, in Southport, on the 27th June, 1935.

Have we any direct evidence how infection operates ? We can give a positive answer of " Yes " to this question. We know definitely that under certain conditions a very high death-rate occurs in young children subject to infection from either mother or father. We found in the Lancashire research on " The Fate of Young Children in Tuberculous Households "[4] that the death-rate from non-pulmonary tuberculosis (tuberculous meningitis, tuberculous bone and joint disease) of young children, under 5 years, exposed to risk was greatly in excess of the rate from the same cause among children in Lancashire serving as " controls ", the rate being :

Nine times greater in the age-group 0–1 ;
Fourteen times greater in the age-group 1–2 ;
Nineteen times greater in the age-group 2–5.

And, as might be expected, the mortality-rate from non-pulmonary tuberculosis among the children exposed to risk was greater in those exposed to infection from a tuberculous mother than a tuberculous father.

Again, in an investigation into " contacts " of tuberculosis, one of my colleagues, Dr. Jessel[5], found that (*a*) known cases of pulmonary tuberculosis give rise to at least 15 per cent. of secondary cases in spite of modern anti-tuberculosis measures ; (*b*) the average interval between the discovery of primary and secondary cases is 3½ years. This figure of 15 per cent. contains adults as well as children.

PREVENTION OF INFECTION.

We have come to the root of the matter. How are we going to prevent infection ? Methods of prevention to be of use, must be based on principles. There seem to be four different principles we can adopt, indicated by the words " isolation ", " immunization ", " environment ", " education ". Is one much better than another ? Should all four be attempted to get the best results ? This Conference may help us to decide. In Lancashire we have taken as our basic principle " Find, Isolate, Educate, and Treat the *Adult Positive Case* ". We have always concentrated on the adult positive case—and believe that this safeguards the child.

Isolation.—Taking a very brief but wide survey, the young child may be safeguarded against human infection by separation from his infectious parent in another home—the French Grancher system—or by isolation and treatment of the adult, mother, father, brother, sister, in hospital or sanatorium—the English hospital method. Again children, especially older children, may themselves be isolated and treated in hospitals—and it is important that children with the adult type of disease be treated in a section of a large sanatorium or hospital, so that collapse therapy can be used. Or, again, the whole family may be placed in ideal conditions, illustrations of these being the village settlement method, or rehousing in bigger and better houses; this is really a combination of isolation and environment.

As an illustration of the application of hospital isolation of the adult patient, we had in the Administrative County of Lancaster at the end of 1934, 79 per cent. of adult pulmonary patients undergoing institutional treatment classified as " T.B. plus ". The actual number of beds used per 1,000 positive cases was 193.

Taking tuberculosis all forms, with a population of 1,800,000 our beds on 31st March, 1935, were as follows :—

Pulmonary tuberculosis.			Non-pulmonary tuberculosis.		
Adults.	Children.	Total.	Adults.	Children.	Total.
657	40	697	120	149	269

The provision of beds which should be available throughout the country is one bed for every death from tuberculosis.

The following statement shows the decline in pulmonary and non-pulmonary tuberculosis in the Administrative County of Lancaster during the past twenty years :—

	Adults and children : Death-rate per 1000 of the population.		
	Pulmonary tuberculosis.	Non-pulmonary tuberculosis.	Tuberculosis (all forms).
1914	0·87	0·32	1·19
1934	0·46	0·12	0·59
Percentage drop in 20 years	47%	62%	50%

	Case-rate per 1000 of the population.		
	Pulmonary tuberculosis	Non-pulmonary tuberculosis	Tuberculosis (all forms).
1914	1·61	0·65	2·27
1934	0·72	0·42	1·15
Percentage drop in 20 years	55%	35%	49%

Dealing only with children under 15 years, the following statement shows the decline which has taken place :

	Death-rate per 1000 of child population.		
	Pulmonary tuberculosis.	Non-pulmonary tuberculosis.	Tuberculosis (all forms).
1914	0·26	0·77	1·04
1934	0·05	0·26	0·31
Percentage drop in 20 years	80%	66%	70%

	Case-rate per 1000 of child population.		
	Pulmonary tuberculosis.	Non-pulmonary tuberculosis.	Tuberculosis (all forms).
1914	0·90	1·34	2·25
1934	0·13	1·01	1·15
Percentage drop in 20 years	85%	24%	48%

To make the application of isolation still more effective, I should like to refer to the use of x-rays to discover cases *before* there are symptoms. This is a hopeful procedure ; it is being tried in the United States where the use of x-rays is in advance of its use in this country.

To sum up the matter as regards isolation, I believe the adoption of the principle of isolation of the adult infectious case has directly affected the decline in mortality, and also, of course, the decline in incidence.

Immunization.—There is a very different principle which the community might adopt. We know that no one need have smallpox —unless he or she so desires. We can prevent diphtheria in nearly all susceptible young children by recent immunizing methods. Why do we not do the same in tubercle ? We shall have many answers to-day and to-morrow. There is the method of the late Prof. Calmette —we shall hear about that, I hope, from Dr. Edouard Rist. Perhaps also we may hear first-hand evidence about the use and value of a blood-plasma, tried at the present time in Switzerland by Dr. Gelpke.

The history of tuberculosis is full of ephemeral projects and all sorts of attempts at immunization, but that is no reason why further experiments should not be tried with drugs, vaccines, or sera which have a *prima facie* reason for their use.

But it is a fact, however, that only a small minority of tuberculosis workers in this country advocate inoculations for immunization. I do not think we have sufficient knowledge at present to warrant a large or routine use of one or more substances to safeguard children against infection.

Environment.—This introduces a new and different principle, and is at least as important as isolation. An important research into the causal factors in tuberculosis was undertaken at the instance of the National Association for the Prevention of Tuberculosis by Dr. F. C. S. Bradbury[6], who, for over twelve months, made an exhaustive investigation on Tyneside, where the incidence of tuberculosis is high. Dr. Bradbury arrived at a number of conclusions, from which the following are extracted as appertaining to environment :—

> (a) *Overcrowding.*—The evidence shows that overcrowding does in fact contribute to the prevalence of tuberculosis, although, being evidence and not statistical proof, it is impossible to reach a degree of absolute certainty on this point. It is considered that the evidence submitted has sufficient statistical value to establish beyond reasonable doubt that overcrowding is a factor of definite importance in contributing to the prevalence of tuberculosis in the areas dealt with.
>
> (b) *Under-nourishment.*—It is considered that the evidence warrants the statement that under-nourishment is a predisposing cause of tuberculosis. There appears to be some justification for regarding an insufficiency of fresh milk as being more important than shortage of the other foodstuffs studied, in predisposing to tuberculosis in an urban population.
>
> (c) *Insanitation.*—Evidence of insanitation being a contributory cause of tuberculosis is not found, although the results are consistent with this hypothesis.
>
> It is considered that the association observed between tuberculosis and insanitation can be completely explained by the greater poverty of tuberculous families compelling them to live in houses which are relatively insanitary.
>
> (d) *Occupation of tenement dwellings.*—On the evidence of the data collected in the inquiry, the conclusion is established that tenement dwellings contribute to the prevalence of tuberculosis by reason of the greater overcrowding which occurs in them than in separate dwellings. It is suggested that this evil is exaggerated by the relatively small size of the rooms which the tenements contain.
>
> (e) *Poverty.*—Poverty shows a marked statistical association with tuberculosis.
>
> The chief element of this association is that poverty causes tuberculosis, rather than that tuberculosis leads to poverty.
>
> The association of tuberculosis with poverty is greater than with most of the other factors studied.
>
> Poverty is, therefore, to be regarded as an important cause of tuberculosis in the areas investigated.
>
> The principal results of poverty which are particularly concerned in leading to tuberculosis are overcrowding and under-nourishment.

Education.—First, all schools ought to be open-air schools; secondly, children should be taught in school hygiene more and better than at present; thirdly, the tuberculosis medical service tries to play its part in the education of the adult in the hospital and in the sanatorium; and fourthly the tuberculosis health visitors of this country render valuable service in educating the adult in the home.

CONCLUSION.

It is clear then, and will be generally admitted, that better education, more efficient isolation, and a better environment—a higher standard of living and of housing—will directly safeguard against infection, and the great diminution which already has occurred in the number of cases of tuberculosis and in the deaths from tuberculosis is due in part to improvements in the well-being of the people. If we apply firmly, resolutely, more widely our known and well-tried methods of isolation and treatment; improve still more the environment of the people, tuberculosis will be finally conquered.

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III.—A RECORD OF 50 AUTOPSIES PERFORMED AT WRIGHTINGTON HOSPITAL.

By E. H. Allon Pask, M.D.,

Medical Superintendent Wrightington Hospital, and Consultant Tuberculosis Officer Wigan County Area.

This survey comprises a series of 50 consecutive post-mortem examinations done at Wrightington; 39 adults and 11 children. The patients, with three exceptions, were suffering from tuberculosis and had been admitted on account of a non-pulmonary lesion.

The site of the initial lesion in each of the 47 cases was as follows :—

Lungs	15
Spine (cervical 3, dorsal 3, lumbar 9)	15
Glands of neck	4
Peritoneum	4
Hip	3
Ankle	2
Testicle	1
Metacarpal	1
Lupus	1
Multiple tuberculide of skin	1

The figures show that the majority of cases commenced with pulmonary tuberculosis or Pott's disease, the numbers being the same in each case. The mortality from Pott's disease (32 per cent.) confirms the generally accepted view that it is the most dangerous of the tubercular affections of bones and joints. It is interesting to note that in this series of cases the lumbar region was the commonest site affected, three times more than the cervical or dorsal regions. These findings are in marked contrast with a series of autopsy figures quoted by Whitman[1] in which the commonest site is the dorsal area (45 per cent.), followed by the lumbar (34 per cent.), and cervical (20 per cent.).

A comparison between the number of cases of Pott's disease admitted to the Wrightington Hospital and the number of deaths is as follows :—

Table 4.

Site.	Number of admissions.	Number of deaths.	Percentage mortality.
Cervical region	7	3	42·8
Dorsal region	74	3	4·0
Lumbar region	74	9	12·1
Total	155	15	9·6

This small series of cases shows that the prognosis is worst in the cervical area, the mortality rate being very high indeed. The percentage mortality in the lumbar region is three times as large as in the dorsal region, so that the prognosis is best when the dorsal region is affected. These conclusions are in direct opposition to the opinion expressed by Jones & Lovatt[2] who state that the outlook is most favourable in the cervical region and least favourable in the dorsal region.

Two of the cases of cervical caries occurred in children who died quite suddenly ; both had retropharyngeal abscesses neither of which had burst.

Photographs W.1 and W.2 illustrate cases of Pott's disease.

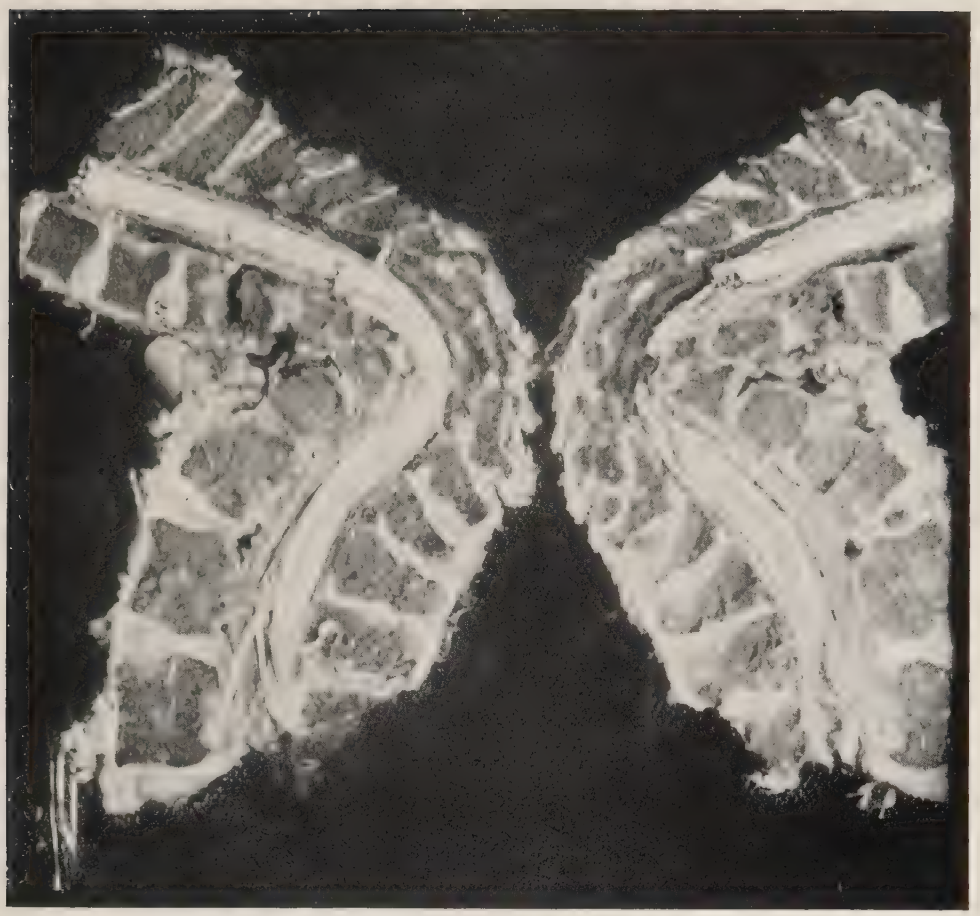
It is interesting to note that there were 4 deaths in which the initial lesion was tubercular glands of neck, a comparatively benign condition yet ultimately leading to death ; the actual cause of death in these cases was due to spread of the disease to other parts of the body.

Tubercular peritonitis was responsible for 4 deaths and tuberculosis of the hip for only 3 deaths.

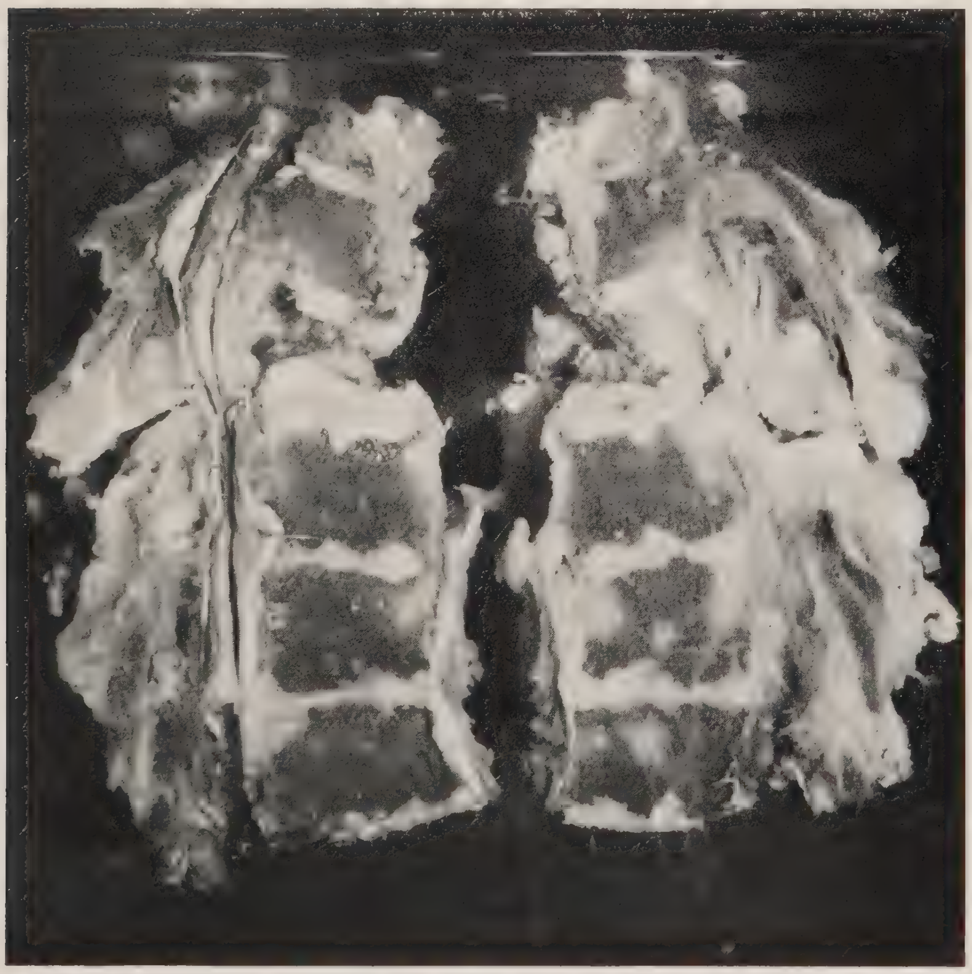
The actual cause of death in the 47 tubercular cases was as follows :—

Amyloid disease	11
Toxæmia with sinuses	13
Toxæmia without sinuses	8
Meningitis	7
Gangrene of arm	1
Diabetes	1
Pathological rupture of bladder	1
Retropharyngeal abscess	2
Pulmonary embolism	1
Tuberculoma of cerebellum	1
Hæmoptysis	1

Amyloid disease is considered by some to be a very rare disease, and in some quarters there seems to be an impression that it is practically non-existent ; one reason for this is the fact that it is seldom seen in the post-mortem room of the teaching hospitals, and thus an erroneous idea occurs as to its frequency. Cases of non-pulmonary tuberculosis are now treated in special hospitals, and consequently are very rarely seen in the general hospitals. In the cases under review, amyloid disease was present in 23.4 per cent., that is almost a quarter of the total number. This figure was obtained by the iodine test, which is admittedly somewhat crude, and presumably if organs from other cases had been submitted to microscopic examination the numbers would have been even higher. It may be noted that sinuses were present in every case except one, and that 13 patients died of

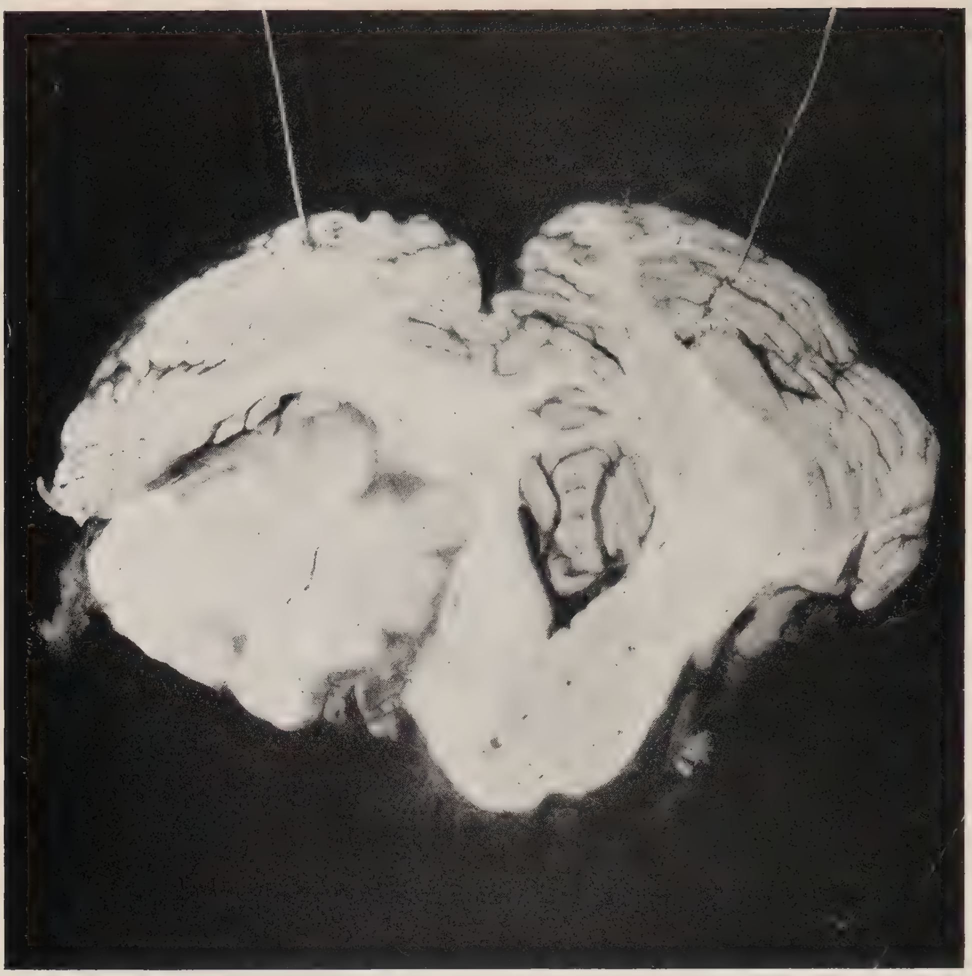


W.1.—M.W., female, aged 18. Pott's disease of 10 years' duration. Photograph shows sagittal section of spine. Marked kyphosis affecting a number of vertebrae in the lower dorsal region. There is considerable destruction of the bodies with deformity, but in spite of this there were no symptoms of paraplegia, the spinal cord being intact. There were numerous sinuses. The liver was greatly enlarged, weighing 46 oz., and showed the typical amyloid reaction with iodine. Cause of death, amyloid disease.

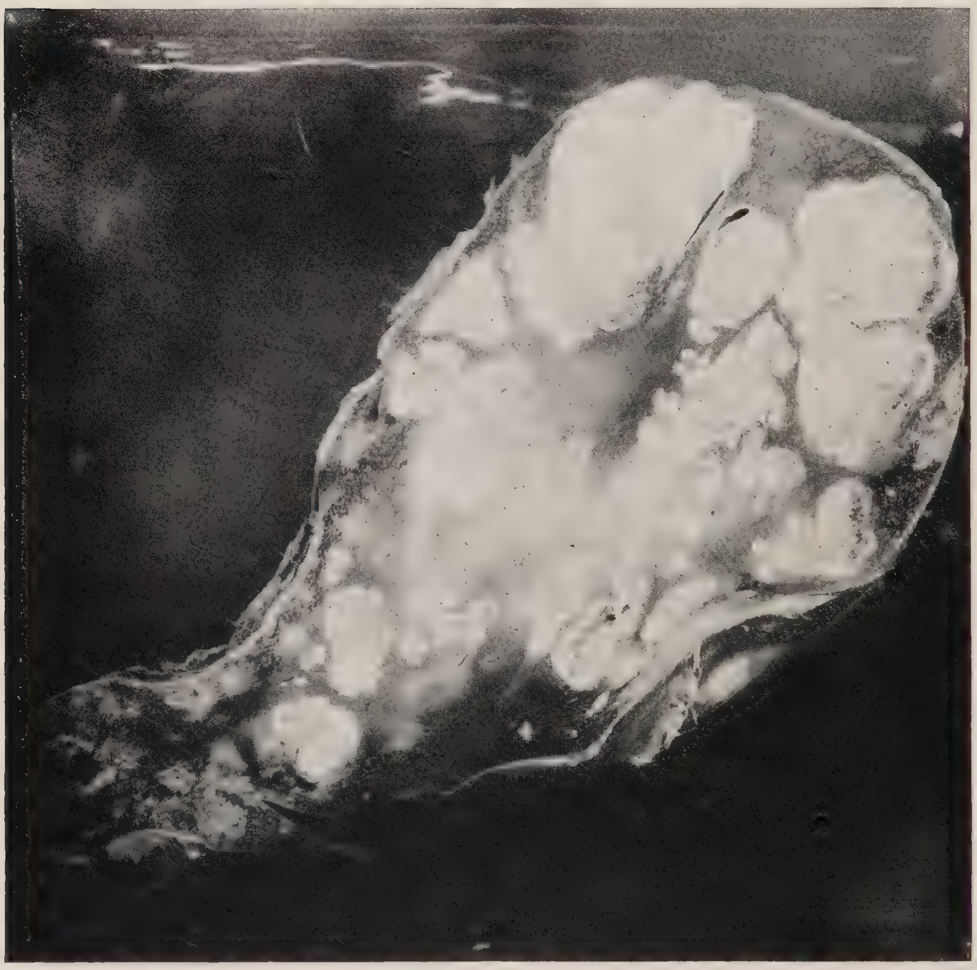


W.2.—P.C., male, aged 23. Photograph shows sagittal section of spine. Pott's disease affecting the upper dorsal region with paraplegia of 18 months' duration, a fairly acute process. Note the almost complete disappearance of one of the vertebral bodies; there is backward displacement of the upper segment of the spinal column causing compression of the spinal cord at the site of the lesion; this is seen in the left half of the specimen. Cause of death, Pott's disease with paraplegia.

[*Photographs taken at Wrightington Hospital.*]



W.3.—J.J., male, aged 34 years. Lupus of face, neck, and arms 15 years. Photograph shows large tuberculoma of the left lateral lobe of cerebellum (lesser brain) displacing the third ventricle to the right. The symptoms for six months were severe frontal headache, vertigo, and optic neuritis. There was no nystagmus and no localising symptoms indicating the actual position of the tumour. Cause of death, tuberculoma cerebellum.



W.4.—D.S., male, aged 32. Admitted to Wrightington with provisional diagnosis of miliary tuberculosis. Photograph shows section of liver with multiple pyæmic abscesses following appendicitis. Pus from one of these abscesses revealed streptococci and staphylococci. No tubercle bacilli were found. The death of this patient occurred four months after the operation for appendicitis in a general hospital.

[*Photographs taken at Wrightington Hospital.*]

toxæmia with sinuses in which there was no macroscopic evidence of amyloid disease; thus of the total of 23 cases with sinuses, amyloid disease was present in 43.5 per cent.

Tubercular meningitis is a more frequent cause of death in non-pulmonary tuberculosis than in pulmonary tuberculosis. In the series under review it was responsible for 7 deaths (5 adults and 2 children), or 15 per cent., whereas in a series of autopsies done at the Brompton Hospital on cases of pulmonary tuberculosis it only occurred in 2.5 per cent. of cases.[3] The probable reason for this is that multiple lesions are commoner in non-pulmonary tuberculosis and there is greater likelihood of a hœmatogenous spread of the disease. Death occurred from this cause in a man aged 67 years. A man aged 33, who had lupus for 16 years, had symptoms of cerebellar tumour; at autopsy a large tuberculoma the size of a walnut was found situated in the left lateral lobe of the cerebellum. This case is illustrated by photograph W.3.

Kidney lesions.—The kidneys were found to be affected with tubercle in 8 cases (17 per cent.). The kidney condition in 5 was diagnosed ante-mortem, and tubercle bacilli were demonstrated in the urine. Only one case was admitted primarily for genito-urinary tuberculosis; the remainder, with one exception, were on admission suffering from either hip-joint disease (4 cases) or tuberculosis of the spine (2 cases). This is in accord with our clinical experience, and one is impressed by the number of hip and spine cases which during their period of recumbency develop symptoms of renal tuberculosis—frequently the onset is quite sudden with a smart attack of hæmaturia. The other common kidney complication seen in bone and joint tuberculosis, after treatment by prolonged bed rest, is stone in the kidney. In this series of cases renal calculi were found in 6 cases (13 per cent.), and in every case except one they occurred in patients with either hip-joint disease or Pott's disease.

Tuberculosis of the supra-renal glands was seen in 2 cases. There were no symptoms of Addison's disease in either of them during life, although in both cases there was extensive disease in these organs.

The lungs were affected in more than half of the cases—in 26 out of the 47 tubercular cases (55 per cent.)—the lesions varying from quite small localised foci to extensive bilateral disease with cavitation. A perusal of the case reports reveals that 15 cases (32 per cent.) originally came under medical supervision for pulmonary tuberculosis, non-pulmonary lesions developing subsequently. In only 8 of the cases could the pulmonary lesion be regarded as in any way contributing to the cause of death, and in the remaining 18 cases pulmonary symptoms were absent for some considerable time before death. This would tend to confirm the view that the development of a non-pulmonary lesion in pulmonary tuberculosis frequently is associated with retrogressive changes in the latter. These findings are in agreement with those of Reisner[4]. The frequency with which the lungs were involved is in marked contrast to autopsy figures of institutions for pulmonary tuberculosis. Reisner quotes the Tuberculosis Department of the Metropolitan Hospital, New York, in which only 4.3 per cent. pulmonary tubercular lesions showed manifest extra-pulmonary involvement[5].

A noticeable feature of the series was the number of cases in which multiple tuberculous lesions were found. A typical case of a boy aged 13 may be quoted. The post-mortem findings were as follow :—

Thorax—numerous large caseating pretracheal and bronchial glands. Both lungs riddled with medium-sized miliary tubercles with a large cavity full of pus in either lung.

Abdomen—contained a large mass of tubercular glands in front of the upper part of the aorta. The surfaces of the *liver and spleen* were studded with tubercles some of which were of large size, and both organs on section showed numerous foci of tubercle in their substance, the largest being the size of a pea.

Genito-urinary system—the right kidney showed a focus of caseous tubercle in the lower pole about the size of a large marble, a small focus was seen also in the cortex at the upper pole. The pelvis on being opened up was found to be extensively studded with tubercle together with the upper part of the ureter which was embedded in a peri-ureteral caseous mass. The right epididymis was extensively involved. The *left hip* was markedly diseased, the joint being completely disorganised with disappearance of the articular cartilage, and there were numerous sinuses. In addition there was disease of the *right knee-joint.*

A case that gave rise to considerable difficulty in diagnosis even at autopsy was that of a man aged 67. Two months before death he had the right leg amputated for typical tuberculosis of the tarsal bones with sinuses. At the post-mortem examination there were found large masses of glands all over the abdomen, most prominent in front of the lumbar spine and behind the head of the pancreas. Extensive deposits, the size of a filbert, were also found in the liver, and there was an enlarged inguinal gland in the right groin about the size of a walnut. The glands and deposits in the liver on section were whitish in colour, homogeneous, and of fairly firm consistency. There was no naked-eye evidence of caseation. In appearance, and in view of the man's age, they strongly suggested secondary malignant deposits, so much so that a careful search was made for the primary growth but none was found. It was not until pieces of the inguinal and abdominal glands were submitted for microscopic examination that their true nature was revealed, and I am indebted to Professor S. L. Baker, of Manchester University, for the following report :—

> "Sections of abdominal and inguinal glands show a large area of necrosed tissue surrounded by a small rim of lymphocytes and epithelioid cells together with a few giant cells of the tuberculous type. The appearances point to either a tuberculous or gummatous lesion, and taking all the features into consideration there is little doubt that it is a somewhat atypical type of caseous tuberculosis."

A case of unusual interest was that of a man, aged 53, who died of gangrene of the left arm caused by the occlusion of the subclavian artery in the thick walls of an old-standing cavity at the apex of the left lung. The symptoms in this case commenced 12 months before the onset of the gangrene. The details of this case have already been published.[6]

There were three autopsies on non-tubercular diseases. Of these two were multiple pyæmic abscesses of the liver following appendicitis ; the patients were both admitted with a provisional diagnosis of miliary tuberculosis—pus was found in both cases on exploring the liver, a rib was resected and an abscess drained ; at autopsy the liver in both instances was found to be riddled with multiple pyæmic abscesses. One of these cases is illustrated by photograph W.4. The third case was admitted for observation purposes. He had septic arthritis of the right hip following a compound fracture of the left tibia, and died of amyloid disease.

SUMMARY AND CONCLUSIONS.

1. The findings at 50 consecutive autopsies at the Wrightington Hospital are analysed.

2. In this series of cases, Pott's disease of the cervical region was the most lethal, that of the dorsal region the least ; the lumbar region occupied an intermediate position.

3. Amyloid disease is a common cause of death in non-pulmonary tuberculosis.

4. Tubercular meningitis is much more frequently seen in non-pulmonary than in pulmonary tuberculosis.

5. Tuberculosis of the kidneys is a common complication in tuberculosis of the hip and spine.

6. Renal calculi are frequently seen in cases of bone and joint tuberculosis after prolonged bed rest, especially in hip and spine cases.

7. Pulmonary tuberculosis was present in over half the cases at autopsy, but only in about a third was it in any way associated with the death of the patient.

8. Pulmonary tuberculosis tends to retrogress with the development of a non-pulmonary lesion.

9. Cases of non-pulmonary tuberculosis at autopsy nearly always show multiple lesions.

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[2] Jones & Lovatt. *Orthopœdic Surgery*, Second edition, page 218.
[3] Powell & Hartley. *Diseases of the Lungs*, Fifth edition, page 481.
[4] Reisner, D. "Extra-pulmonary and Pulmonary Tuberculosis." *American Review of Tuberculosis*, Vol. XXX, No. 4, Oct., 1934.
[5] *Ibid.*
[6] Pask, E. H. A. *The Lancet*, 3—11—34, page 987.

IV.—HYDNOCARPATES IN THE TREATMENT OF LUPUS VULGARIS.

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The following note, based on a further twelve months' experience, is supplementary to that given in last year's annual report.

The treatment consists of intradermal injections into the lupoid areas of a mixture of the esters of hydnocarpus oil in the form of moogrol (Burroughs, Wellcome & Co.).

The results in the 14 cases which have received injections at the Wigan County Dispensary during the past two years are as follow :—

Quiescent with pale healthy scars	5
Quiescent except for small isolated areas ..	3
Definitely improved—should become quiescent ..	4
Slight improvement—unable to attend for further treatment	1
No improvement	1

These figures, whilst not dramatic, have been sufficiently encouraging to justify the adoption of the treatment as a routine part of the dispensary practice. The patients, as a whole, are pleased with their progress and are anxious to continue—a point of some significance.

As regards modifications in the technique originally described, the following points are worthy of mention :—

1. The use of iodized moogrol has been abandoned, partly because it was thought to be less effective than plain moogrol and also because of the bluish-brown staining produced in the scars.
2. Reactions have been diminished by spacing the injections as far apart as possible (at least 1 inch). This is of special importance in lesions of the face and forehead, where crowding of the injections may be followed by marked oedema of the loose subcutaneous tissues around the eyes.

   It follows then that the number of injections at any one sitting depends on the size and situation of the individual lesions. As far as possible, injections are given at weekly intervals but no area is injected a second time until the previous inflammatory change has subsided.

After all treatment has ceased, the scars slowly become paler and thinner and it may be several months before the final effect is seen. During this time a close watch has to be kept for recurrent nodules which must be dealt with at the earliest moment.

3. Little pain is felt at the time of injection, but a certain amount develops during the succeeding 48 hours, varying in severity with the extent of the reaction. In an attempt to overcome this, Messrs. Burroughs, Wellcome & Co. are shortly producing a mixture of moogrol and benzocaine, in the hope that a local anæsthetic effect may be exercised.

4. Through the kindness of Sir Leonard Rogers and Dr. T. A. Henry, of the Wellcome Chemical Research Laboratories, a supply of phenylethyl hydnocarpate has recently been obtained. This was originally made for use in certain sensitive cases of leprosy, and is now available from Messrs. Burroughs, Wellcome & Co.

   Pharmacological trials have shown that the preparation is less irritant than moogrol and this has been confirmed in some of the present cases. Sufficient time, however, has not elapsed to say whether the ultimate effect is as beneficial, although first impressions are favourable in this respect.

V.—NOTIFICATION OF TUBERCULOSIS CASES.

It is the statutory duty of every medical practitioner to notify within 48 hours to the local medical officer of health any case of tuberculosis occurring in his practice, and the medical officer of health is charged with the duty of keeping a corrected register of such cases reported in his sanitary district.

The statutory notifications are made under the Public Health (Tuberculosis) Regulations, 1930, which came into force on 1st January, 1931. These regulations consolidate the regulations issued in 1912, 1921 and 1924, and they also include several minor amendments of an administrative nature.

NON-NOTIFICATION.

I have continued to direct special attention to the notification of cases of tuberculosis, and have engaged in correspondence with medical practitioners, medical officers of health, and medical superintendents, over many individual cases.

The extent of non-notification of pulmonary cases in the Administrative County is shown in the following Table 5 :—

Year.	Number of deaths from pulmonary tuberculosis recorded.	Deaths not notified under Regulations during life.	
		Number.	Percentage to pulmonary deaths.
1918	1652	303	18·3
1919	1339	221	16·5
1920	1323	177	13·3
1921	1301	135	10·3
1922	1362	105	7·7
1923	1250	85	6·8
1924	1215	64	5·2
1925	1205	67	5·5
1926	1158	58	5·0
1927	1105	54	4·8
1928	1066	56	5·2
1929	1102	62	5·6
1930	1046	46	4·3
1931	1021	61	5·9
1932	975	37	3·8
1933	1010	45	4·4
1934	848	35*	4·1*

* Of the 35 deaths which, in 1934, escaped statutory notification as tuberculous cases during life, it should be stated that 4 were known to the tuberculosis officer, and 8 died in mental hospitals, public assistance hospitals, and general hospitals. If these 12 deaths which

were known otherwise than by the official primary notification under the Regulations be deducted, then the percentage of 4·1 *non-notified fatal cases would be reduced to* 2·7, *which figure may be taken as the real extent of missed notifications resulting in cases escaping supervision by the health authorities.*

The improvement which has been secured in recent years in the notification of cases of pulmonary tuberculosis before death would not have been practicable without the cordial co-operation of the local medical officers of health and, of course, the general practitioners who make the notifications.

There is no doubt that in this Administrative County a much smaller proportion of cases of tuberculosis escapes notification than is frequently the experience in other parts of the country. Thus, we have a smaller proportion of unknown cases or unknown sources of infection remaining outside the measures for the control of tuberculosis.

For non-pulmonary tuberculosis, there were 46 non-notified fatal cases in 1934, which on the total deaths from this form of the disease equalled 19·9 per cent. The percentage in the previous year was 13·3.

SPECIAL ENQUIRY INTO NON-NOTIFIED FATAL CASES.

Commencing in October 1920, special investigations have been carried out in regard to every individual death recorded which had not been previously notified. The procedure followed has been to examine the names of persons dying from tuberculosis given in the weekly returns of deaths sent, by arrangement, to the tuberculosis department by the district registrars. The names are compared with the notification register, and the death of every person not previously reported as a case under the Public Health (Tuberculosis) Regulations is enquired into; information as to the circumstances attending non-notification is obtained from the tuberculosis officer and, if necessary, the medical attendant.

In 1934, there were 81 such deaths, and the enquiry for that year gave the following important results :—

(1) That 27 (8 pulmonary, 19 non-pulmonary) of the 81 deaths in 1934 occurred in public institutions.

(2) That of the remaining 54 deaths, the circumstances of non-notification were as stated in the following table :—

TABLE 6. *Circumstances of non-notification of fatal cases.*

	Period 1st January to 31st December, 1934.		
	Pulmonary	Non-pulmonary	Total
Doctor in attendance shortly before death—			
1 week or less	3	2	5
1 to 2 weeks	—	—	—
2 to 3 weeks	—	1	1
Complicated cases, presenting difficulty in diagnosis	3	12	15
Misinterpretation of Tuberculosis Regulations and notification believed to be unnecessary—			
Cases previously notified in another area ..	6	2	8
Cases known to tuberculosis officers—considerable doubt as to diagnosis in some of these cases	4	1	5
No doctor in attendance	7	—	7
Disease of long duration	—	2	2
Attended by more than one doctor, and notification believed to have been made by first practitioner	—	2	2
Notified after death	2	2	4
No apparent reason for non-notification	2	1	3
	27	25	52
Tuberculosis not primary cause of death	—	1	1
Information not ascertained..	—	1	1
TOTAL	27	27	54

(3) *This table shows that in only* 3 *of the* 54 *deaths was there no reasonable excuse for non-notification.*

The efficiency of notification varies directly with the efficiency of the county council or county borough scheme dealing with tuberculosis. If there is no really comprehensive scheme, if there are poor and newly qualified, part-time, and badly paid tuberculosis officers, if there are insufficient means for expert diagnosis, and too few beds for treatment, then a high proportion of non-notified fatal cases will be the rule and not the exception.

TOTAL "KNOWN SOURCES OF POSSIBLE INFECTION."

One effect of the better notification of cases by practitioners has been to add to the number of new cases in recent years and statistically to make the figures disadvantageously comparable with the earlier years when a larger number of cases escaped notification.

It is, however, possible to obtain a truer record of the number of new cases of pulmonary tuberculosis occurring year by year by adding together (*a*) the notifications and (*b*) the deaths which occurred without notification being made during life ; this total gives clearly the number of known sources of possible infection as Table 1 on page 2 shows.

VI.—APPLICATIONS FOR TREATMENT.

Table 7 below shows the number of "new" patients (1,820) who applied for treatment under the County scheme during the year 1934 :—

	Number of applications received during 1934.	Diagnosis of new applicants for treatment.			
		Pulmonary cases.	Pulmonary and non-pulmonary.	Non-pulmonary cases.	Diagnosis not confirmed (non-tuberculous).
Men	736	591	11	122	12
Women ...	702	488	9	197	8
Boys	197	9	3	182	3
Girls	185	32	—	150	3
TOTAL ...	1,820	1,120	23	651	26

Applications received in previous years were :—1918–22 average, 2,255; 1923–27 average, 2,258; 1928–32 average, 1,989; 1933, 1,920; compared with 1934, 1,820. Thus there were 100 fewer applications than in 1933.

During 1934, there were 2,089 cases notified under the Public Health (Tuberculosis) Regulations as suffering from tuberculosis (all forms), whereas the number of persons who applied for treatment to the County Council was 1,820, equal to 87 per cent. of the notifications. The 13 per cent. of notified cases who did not apply for treatment consisted mainly of tuberculous persons in mental hospitals.

CLASSIFICATION OF NEW PATIENTS.

(*a*) *Pulmonary tuberculosis.*

During 1934, applications for treatment were received from 1,143 new patients, and these were reported by the tuberculosis officers to be in the undermentioned stages of the disease on the first examination :—

T.B. minus (Sputum negative or absent)	417 or 36·5	per cent.
T.B. plus 1 (Early cases, sputum positive)	78 or 6·8	,, ,,
T.B. plus 2 (Intermediate cases, sputum positive)	478 or 41·8	,, ,,
T.B. plus 3 (Advanced cases, sputum positive)	170 or 14·9	,, ,,

It is well known that, throughout the country, tuberculosis officers do not see many of the new cases in the early stage of the disease.

Some patients through ignorance, others on account of economic reasons, neglect to consult a doctor when in the early stage, and so lessen their chance of recovery. In the Administrative County we have for several years made special investigations into the reasons underlying such disastrous delay on the part of patients. These investigations have been continued in 1934, yielding the following conclusions which correspond closely with those published in previous reports :—

1.—Altogether 75·9 per cent. of the 170 advanced cases either had no doctor or had only been attending their doctor for less than two months when first examined by the tuberculosis officer or notified. The corresponding percentage in 1933 was 67·8.

2.—After making allowance for a percentage of fulminating cases ("galloping consumption"), a large proportion—three-fourths—of patients had felt ill for one or more months before consulting a doctor.

3.—The reason for late notification and patients delaying their application until in an advanced stage of the disease is chiefly the disinclination or unwillingness of the patients to report themselves to their doctor when feeling ill. This is due mainly to the insidious onset of the disease, the discomfort being only slight at first.

4.—There does not appear to be evidence in any large number of cases of unreasonable delay on the part of family doctors referring cases to the tuberculosis officer.

5.—The initiative to seek treatment when ill rests with the patient himself, and the only feasible remedy lies in the education of the public as to symptoms and common dangers of tuberculosis and the need for securing prompt treatment. This cannot be too strongly or too often emphasised.

In previous reports I have mentioned the teaching of hygiene to the older children at school, a matter which has been brought to the notice of the Director of Education for the County.

The tuberculosis medical staff have to depend very largely on the general practitioners throughout the County for bringing forward tuberculous patients, and it is satisfactory to note that 90 per cent. of new cases are sent *before notification* to the tuberculosis officers for an opinion as to diagnosis. Too much importance is still laid by some doctors on sputum examinations alone, and often too long a time is allowed to elapse in order that the sputum may be tested; or steps are not taken to report the case until it is returned as " positive."

Co-operation also takes place between the tuberculosis medical staff and the school medical officers. The latter refer doubtful or suspicious cases to the tuberculosis officer; on the other hand the tuberculosis officer reports confidentially to the school medical officer the name of any school child who was or is actually in contact (*i.e.*, living in the same house) with an adult infectious case of pulmonary tuberculosis. The school medical officer is then able to take what action he considers desirable in regard to supervising the child or children so exposed to infection.

(*b*) *Non-pulmonary tuberculosis.*

There were 651 new cases diagnosed by the tuberculosis officers as suffering from non-pulmonary tuberculosis in the following forms :—

Bones, joints and spine	157	651
Abdomen	90	
Other organs	47	
Peripheral glands	320	
Skin	37	

In 1933 the number of applications from non-pulmonary cases was 651.

VII.—THE TREATMENT OF PULMONARY TUBERCULOSIS IN RESIDENTIAL INSTITUTIONS.

The most expensive part of a tuberculosis scheme is the cost of maintaining patients in sanatoria or hospitals. The practice of the tuberculosis medical staff has always been conservative in regard to diagnosis, particularly in children, and every opportunity has been taken to adopt up-to-date methods of diagnosis. For this purpose the County Council have allowed their senior medical staff to attend post-graduate courses and to undertake research.

A very thorough examination at the dispensary, and especially the use there of a good x-ray plant ensures that only cases with definite tuberculosis are taken on the register and afforded treatment. This saves a considerable amount of public money by reducing the number of beds required for the treatment of patients.

As regards pulmonary adults, should tuberculosis institutions treat separately or on the same site the observation, the early, the chronic, and the acute case ? The problem of dealing with the tuberculous, and more particularly the chronic tuberculous, patient cannot be decided on the basis of a separation of what may be called good and bad cases. The superintendent of an isolated sanatorium is always wishing to have his institution cleared of chronic and advanced cases. While very understandable, this does not help in the prevention and treatment of tuberculosis as a whole. Experience has shown that, by the use of x-rays and minor collapse therapy in tuberculosis institutions—not too big, situated near the patients' homes, superintended or attended by the tuberculosis officer, and taking all types of pulmonary cases—prevention and treatment go hand in hand, and the title given to the institution—hospital or sanatorium—is of little importance.

I believe then that tuberculosis institutions for pulmonary disease should treat on one and the same site the good, the bad, and the intermediate case, and treatment will often have to be of long duration.

Arrangements for the institutional treatment of pulmonary children (up to 15 years of age) require careful consideration, and such patients should be divided into three categories and dealt with in institutions as follows :—

Class 1. Children with positive sputum (indicating the adult type of pulmonary tuberculosis): should be provided with separate accommodation at institutions for adult pulmonary cases.

Class 2. Children with negative or no sputum: should be treated at sanatorium schools.

Class 3. Children with indefinite symptoms, generally known as the pre-tuberculous type: should attend open-air schools provided by the local education authority.

With regard to adults suspected to be suffering from pulmonary tuberculosis, a conservative attitude has been adopted, as may be noted from the proportion (36·9 per cent.) of pulmonary cases on the register classified as T.B. minus. In contrast six large counties, with a population in the region of a million, show an average percentage of 52·5 T.B. minus cases; for the whole of England, the proportion was 52·8.

A further factor seriously affecting the number of beds required is the duration of treatment allowed to a patient. Here again every case has to be carefully weighed on its merits, but generally the following principles have been adopted:—

(*a*) Patients who are responding to institutional treatment are given a prolonged stay (6 months and over) so long as there is a likelihood of the disease becoming quiescent. To return such cases to their homes and to work before attaining quiescence is uneconomical because of the danger of the patient breaking down and all the good of institutional treatment being wasted.

(*b*) Patients, particularly the young adult group (aged 15–25), who have been given special forms of treatment (*e.g.*, artificial pneumothorax, phrenicectomy, thoracoplasty, sanocrysin) are allowed a sufficient stay (say, up to 6 months) to show progress from their treatment and are retained up to 12 months or more if their condition warrants it; cases treated by artificial pneumothorax attend at the dispensaries for a continuation of their treatment.

(*c*) Patients whose sputum has never been positive and who are not likely to make further progress or to require special treatment are allowed to return home at the end of two or three months' treatment. Many sputum examinations are made in this type of case and the usual practice is to make three tests of consecutive daily specimens.

(*d*) Patients with positive sputum who are not likely to make further progress and whose home conditions are reasonably satisfactory are allowed to return home at the end of two or three months' treatment.

The tuberculosis officers when making recommendations for institutional treatment bear in mind the following questions: (1) Is institutional treatment required to improve the patient's health? (2) Is institutional treatment desirable to secure nursing care which cannot be otherwise obtained at home? (3) Is institutional treatment necessary to prevent the spread of infection?

All the patients in sanatoria and hospitals receive the benefit of and training in hygiene which is advantageous to themselves and a protection to others when they return home.

IMMEDIATE RESULTS OF INSTITUTIONAL TREATMENT.

The following Table 8 summarises the *immediate* results of treatment of patients discharged in 1934 from sanatoria and pulmonary hospitals :—

Classification on admission to the institution.	Condition at time of discharge.	Duration of residential treatment in the institution.															Total patients discharged.	
		Under 28 days.			1—3 months			3—6 months			6—12 month			More than 12 months.				
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	No.	%
T.B. minus.	Quiescent	2	—	—	7	3	1	16	10	2	13	12	7	2	2	8	85	31·9
	Improved	2	3	5	22	12	1	40	20	1	10	6	1	2	1	—	126	47·4
	N.M.I. ..	7	6	2	8	3	—	2	4	1	4	2	—	—	—	1	40	15·0
	Died ...	1	1	2	4	—	—	2	2	—	—	1	1	—	1	—	15	5·6
T.B. plus 1 (early)	Quiescent	—	—	—	—	—	—	6	—	—	3	6	—	5	7	—	27	32·1
	Improved	—	—	—	2	4	—	9	8	—	6	6	—	3	2	—	40	47·6
	N.M.I. ..	1	3	—	3	1	—	—	1	—	—	—	—	1	2	—	12	14·3
	Died ..	1	1	—	2	—	—	1	—	—	—	—	—	—	—	—	5	5·9
T.B. plus 2 (intermediate)	Quiescent	—	—	—	—	3	—	3	11	1	19	9	—	11	10	3	70	10·7
	Improved	3	2	—	37	17	—	71	37	—	79	43	2	28	12	1	332	50·9
	N.M.I. ..	14	8	—	16	17	1	13	26	—	10	7	—	8	2	—	122	18·7
	Died ...	20	11	1	27	14	—	19	9	—	9	12	—	4	2	—	128	19·6
T.B. plus 3 (advanced)	Quiescent	1	—	—	1	—	—	1	1	—	—	1	—	1	—	—	6	3·3
	Improved	—	—	—	2	7	—	13	7	—	8	5	—	9	1	—	52	28·7
	N.M.I. ..	5	4	—	12	7	—	2	6	—	6	5	1	—	1	—	49	27·1
	Died ..	10	16	—	15	13	1	4	5	—	4	1	—	4	1	—	74	40·9
	Total ..	67	55	10	158	101	4	202	147	5	171	116	12	78	44	13	1183	—
Diagnosis on discharge from observation.											Stay under 4 weeks.			Stay over 4 weeks.				
Tuberculous											5	2	—	4	4	6	21	32·8
Non-tuberculous											6	2	—	13	8	7	36	56·2
Doubtful											1	2	—	—	2	—	5	7·8
Died											—	—	1*	—	1†	—	2	3·1
											GRAND TOTAL ...			...			1,247	

N.M.I. = No material improvement. Died comprises deaths in the institution only.

* Diagnosis : Streptococcal broncho-pneumonia.

† ,, : Pleurisy and myocardial degeneration.

The table illustrates that better results are achieved when institutional treatment is given before the sputum becomes positive ; further, the more advanced the disease the less satisfactory are the results.

The following Table 9 shows the names of the sanatoria and pulmonary hospitals and the number of patients suffering from pulmonary tuberculosis admitted and discharged during 1934 :—

Institution.	Definite cases			Observation cases		
	Admissions	Discharges	Deaths	Admissions	Discharges	Deaths
Aitken Sanatorium, near Bury	73	55	10	2	2	—
Burnley Pulmonary Hospital	16	12	4	—	—	—
Cambridgeshire Tuberculosis Colony, Papworth Hall, Cambridge	4	2	—	—	—	—
Chadderton Pulmonary Hospital, near Oldham ...	80	46	28	1	—	1
East Lancashire Tuberculosis Colony, Barrowmore Hall, near Chester	102	79	21	2	2	—
Eastby Sanatorium, near Skipton	7	13	—	6	4	—
Eccleston Hall Sanatorium, St. Helens	17	11	3	2	2	—
Elswick Sanatorium, near Kirkham	139	119	18	12	12	1
Halifax Sanatorium, Shelf...	41	35	3	—	—	—
Heath Charnock Pulmonary Hospital, near Chorley	62	38	24	—	—	—
Hefferston Grange Sanatorium, Weaverham, Cheshire	9	10	3	1	1	—
High Carley Sanatorium, near Ulverston ...	147	134	7	20	22	—
King Edward VII Sanatorium, Midhurst, Sussex	3	5	—	—	—	—
Oubas House Children's Sanatorium, Ulverston...	18	13	—	6	9	—
Peel Hall Pulmonary Hospital, near Bolton ...	111	94	15	—	—	—
Pemberton Pulmonary Hospital, Wigan	11	8	3	—	—	—
Rufford Pulmonary Hospital, near Ormskirk ...	127	106	20	1	1	—
Springfield Sanatorium, Rochdale...	16	—	1	—	—	—
Westmorland Sanatorium, Meathop, Grange-over-Sands	35	27	4	2	2	—
Wilkinson Sanatorium, near Bolton	8	5	1	—	—	—
Withnell Pulmonary Hospital, near Chorley ...	58	40	19	6	5	—
Wolstenholme Pulmonary Hospital, Norden, Rochdale	71	60	21	—	—	—
Wrightington Hospital, near Wigan	58	34	12	—	—	—
Other sanatoria and hospitals	13	15	5	—	—	—
TOTAL	1,226	961	222	61	62	2

In each of the five large dispensary areas, there is a pulmonary hospital in the charge of the consultant tuberculosis officer, an arrangement of the highest importance because patients come to these hospitals from the area administered by the tuberculosis officer, who is, therefore, conversant with the home conditions. Further, it is of great advantage to the tuberculosis officer, because he can himself apply certain forms of treatment and carry out valuable clinical and research work.

A number of patients are also accommodated in the pulmonary hospitals belonging to other bodies situated in or near the area. Arrangements have been made (with minor exceptions) for the tuberculosis officers to visit periodically the pulmonary hospitals in their area and confer with the medical superintendents on the following matters :—

1. The question of extension of patients' treatment or their return home, having special regard to the home conditions which are known to the tuberculosis officers.

2. The special consideration of any patient who is not responding to treatment at the institution.

3. The question of the patients' future treatment, including the facilities for treatment at home.

4. Applications from patients for transfer to other institutions, or for their discharge home, and to settle, where possible, any difficulties or complaints by patients.

The foregoing working arrangements have enabled the highly infectious cases with unsatisfactory home conditions to remain at the pulmonary hospitals for long periods for the purpose of isolation, and it is always possible for patients who have made good progress and are capable of light work to be transferred to sanatoria for the continuation of their treatment.

By the Public Health Act of 1925, a county council or a local sanitary authority now have power to secure the compulsory isolation of infectious cases on the order of the magistrates. So far it has only been necessary for one patient to be so dealt with.

AFTER-HISTORIES OF ADULT PATIENTS SUFFERING FROM PULMONARY TUBERCULOSIS.

In my report for 1933, the after-histories of adult pulmonary patients who came on the dispensary registers during the years 1920, 1925, and 1930 were recorded. As there will be very little change in the results in 12 months, the after-histories have not been worked out again this year.

VIII.—THE TREATMENT OF NON-PULMONARY TUBERCULOSIS.

IMMEDIATE RESULTS OF INSTITUTIONAL TREATMENT AT GENERAL AND SPECIAL HOSPITALS.

A summary of the condition on discharge of patients treated during 1934 in approved general and special hospitals is given in the following Table 10 :—

Classification on admission to the institution.	Condition at time of discharge.	Duration of residential treatment in the institution.															Total patients discharged	
		Under 28 Days.			1—3 months			3—6 months			6—12 months			More than 12 months				
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	No.	%
Bones and joints.	Quiescent ...	1	5	—	5	2	5	3	4	13	8	11	18	2	5	27	109	48·4
	Improved ...	7	7	3	6	5	3	3	6	3	5	6	4	10	1	6	75	33·3
	N.M.I. ...	3	3	4	—	4	4	1	2	—	—	—	1	1	—	1	24	10·7
	Died ...	—	1	—	1	1	—	—	3	1	1	—	2	3	—	4	17	7·6
Abdominal.	Quiescent ...	1	1	1	—	2	2	6	4	1	1	—	3	—	—	1	23	37·1
	Improved ...	—	2	1	1	4	3	3	—	7	—	1	2	—	—	1	25	40·3
	N.M.I. ...	1	4	3	1	—	—	—	—	—	—	—	—	—	—	—	9	14·5
	Died ...	1	—	1	—	—	1	1	—	—	—	—	—	—	—	1	5	8·1
Other organs.	Quiescent ...	2	1	—	3	—	1	1	—	2	—	—	—	—	—	—	10	16·9
	Improved ...	7	10	—	7	5	4	3	2	1	1	—	—	—	—	—	40	67·8
	N.M.I. ...	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	3	5·1
	Died ...	—	—	2	1	1	—	2	—	—	—	—	—	—	—	—	6	10·2
Peripheral glands.	Quiescent ...	5	7	5	3	5	10	—	2	6	—	1	5	1	—	1	51	46·4
	Improved ...	6	20	15	—	2	2	—	—	5	—	—	—	—	—	—	50	45·4
	N.M.I. ...	2	3	3	—	—	—	—	—	—	—	—	—	—	—	—	8	7·3
	Died ...	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	0·9
	Total ..	36	65	38	30	31	35	23	23	39	16	20	35	17	6	42	456	—
Diagnosis on discharge from observation.											Stay under 4 weeks.			Stay over 4 weeks.				
Tuberculous											1	4	4	7	3	10	29	52·7
Non-tuberculous											2	1	—	6	4	4	17	30·9
Doubtful											—	1	1	1	1	3	7	12·7
Died											—	—	—	2*	—	—	2	3·6

Grand Total ... 511

N.M.I. = No material improvement. Died comprises deaths in the institution only.

* Diagnosis : (1) Acute septic arthritis and amyloid disease ; (2) Perinephric and intrahepatic abscesses.

AFTER-HISTORIES OF PATIENTS SUFFERING FROM NON-PULMONARY TUBERCULOSIS.

In my report for 1933, the after-histories of adults and children first treated during the years 1920, 1925, and 1930 were recorded. It was found that roughly three-quarters of the adults and children had recovered from their non-pulmonary condition or arrived at a stage with the disease arrested or quiescent. As there will be very little change in the results in 12 months, the after-histories have not been investigated again in detail this year.

IX.—TREATMENT OF TUBERCULOSIS BY ARTIFICIAL LIGHT.

Present Position of the County Scheme.

Commencing with two experimental light centres in 1925, the County scheme has been extended, and the following table shows the 13 centres which have been established at County tuberculosis dispensaries, the date opened, and the lamp equipment :—

Table 11.

Dispensary area.	Dispensary at which light centre established	Date light centre opened.	Lamp equipment.
No. 1	Lancaster	15/7/25	1 " Sunrae " carbon arc. 1 Kromayer mercury vapour. 1 Hanovia mercury vapour.
	Chorley	14/10/26	2 " Sunrae " carbon arcs. 2 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Preston	29/11/27	2 " Sunrae " carbon arcs. 1 " Alpine Sun " carbon arc. 1 Tungsten arc. 1 Kromayer mercury vapour.
No. 2	Accrington	26/1/32	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Nelson	20/11/28	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.
	Stacksteads ...	9/1/28	2 Jesionek mercury vapour. 1 Kromayer mercury vapour.
No. 3	Ashton-under-Lyne	11/9/25	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour. 1 Sollux luminous heat ray.
	Radcliffe	20/7/28	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour. 1 Sollux luminous heat ray.
No. 4	Eccles	1/12/27	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour. 1 Murray-Levick infra-red.
No 5	St. Helens	16/1/28	2 " Sunrae " carbon arcs. 1 Kromayer mercury vapour.
Furness ...	Ulverston	5/6/28	2 " Sunrae " carbon arcs. 1 Kromayer mercury vapour.
Fylde	Fleetwood	25/6/28	2 " Sunrae " carbon arcs. 1 Kromayer mercury vapour.
Wigan County	Wigan	31/5/29	2 " Sunrae " carbon arcs. 1 Jesionek mercury vapour. 1 Kromayer mercury vapour.

The treatment of the patients has been carried out under the direct supervision of the consultant tuberculosis officer of each dispensary area and by the medical and nursing staff under him.

RESULTS OF TREATMENT.

Tables, showing the results of treatment at each light centre, have been received from the consultant tuberculosis officers of the dispensary areas and summarised in the following form, which represents the work done at the 13 centres during the year 1934 :—

TABLE 12.

Form of tuberculosis or part of body affected.	Number of cases on treatment on 1–1–34	Number of cases commencing treatment in 1934	Condition of patients whose treatment concluded in 1934.				Ceased treatment for other reasons. *	Still under treatment at end of 1934.
			Quiescent and apparently well.§	Improved.	Stationary.	Worse.		
Skin	148	69	39	35	4	—	31	108
Adenitis with abscess formation and skin involvement ...	75	145	102	8	4	—	29	77
Adenitis without softening ...	110	155	125	19	—	—	37	84
Bones, joints, and spine ...	20	20	14	5	2	—	8	11
Abdomen	15	10	12	2	—	—	4	7
Other non-pulmonary conditions	7	8	3	1	—	—	4	7
Lungs—sputum positive ...	—	1	—	—	1	—	—	—
Pulmonary and non-pulmonary combined	1	2	—	—	—	1	1	1
	376	410						
Total for 1934	786 †		295	70	11	1	114	295
	406	411						
For comparison, the total in 1933 was	817 ‡		287	46	13	2	93	376

* Includes : (1) Patients who did not receive two months' treatment ; (2) patients ceasing light treatment prematurely (*e.g.*, removals, unwilling or unable to continue) ; and (3) patients transferred to sanatoria or hospitals.

† Adults, 409 ; children, 377. ‡ Adults, 441 ; children, 376.

§ The term "quiescent and apparently well" has been chosen to express the condition of a lesion which has been healed by artificial light treatment. By direction of the Ministry of Health no case of non-pulmonary tuberculosis is written off the tuberculosis register as "recovered" until three years have elapsed without any signs or symptoms of active disease.

The results of treatment of cases of non-pulmonary tuberculosis in 1934 may be considered satisfactory, particularly for five groups of cases, namely : (i) Adenitis with abscess formation and skin involvement ; (ii) adenitis without softening ; (iii) abdomen ; (iv) bones and joints ; and (v) skin. Conditions (i) and (v) are usually refractory to other forms of treatment.

The average gain in weight of the 295 patients who became " quiescent and apparently well " was as follows :—Adults 3·08 lbs. ; children 6·38 lbs.

The degree of pigmentation attained in these 295 patients was : Deep 64, medium 64, light 105, none 62.

During 1934, 43 patients, who had ceased treatment in a previous year with the disease quiescent and apparently well, relapsed and returned for further treatment ; the classification of these cases was as follows :—Skin, 11 ; adenitis with abscess formation and skin involvement, 11 ; adenitis without softening, 15 ; bones and joints, 4 ; abdomen, 1 ; and Bazin's disease, 1.

In addition to the 786 active cases dealt with in Table 12, there were 17 non-pulmonary cases whose condition was quiescent on commencing light treatment. The object of treatment was to prevent a possible recurrence of active disease.

AVERAGE DURATION OF TREATMENT.

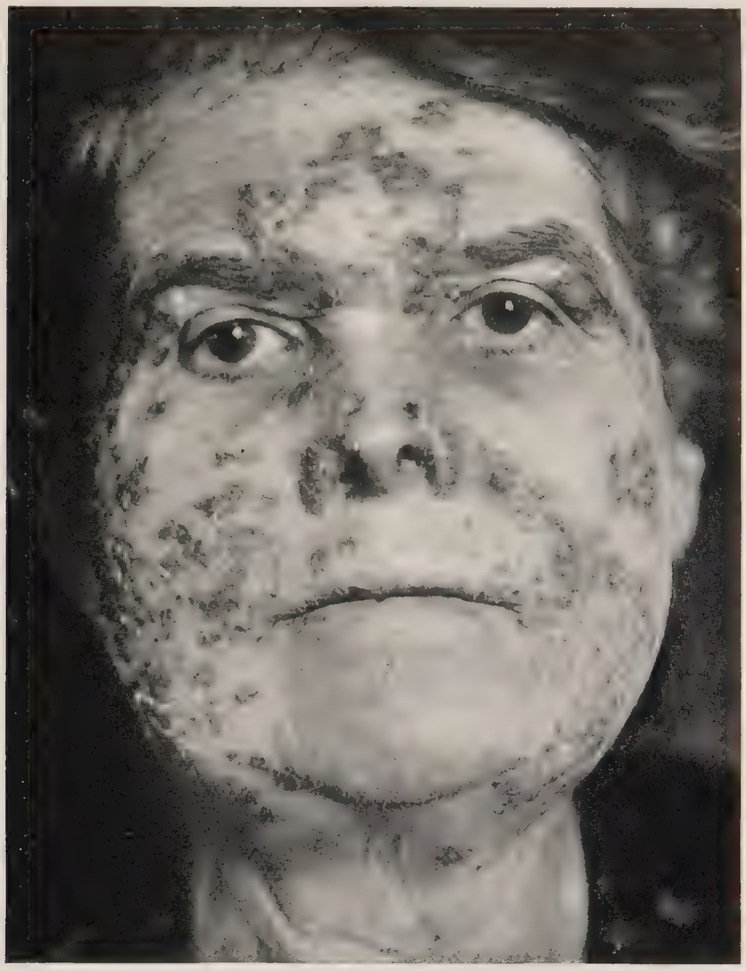
The duration of treatment has varied widely according to the type of non-pulmonary disease. Taking several groups of cases in which the disease has become quiescent and apparently well the average duration is as given in the following Table 13 :—

Form of tuberculosis or part of body affected.	Number of cases (active on commencing light treatment) who became "quiescent and apparently well."	Average duration of light treatment.	*For comparison* : Average duration of disease *before* commencing light treatment.
		Months.	Months.
Skin	39	22·48	92·65
Adenitis with abscess formation and skin involvement ...	102	7·99	14·74
Adenitis without softening ...	125	8·88	13·00
Bones, joints, and spine ...	14	16·14	38·28
Abdomen...	12	17·43	19·06
Other non-pulmonary conditions	3	12·33	50·00

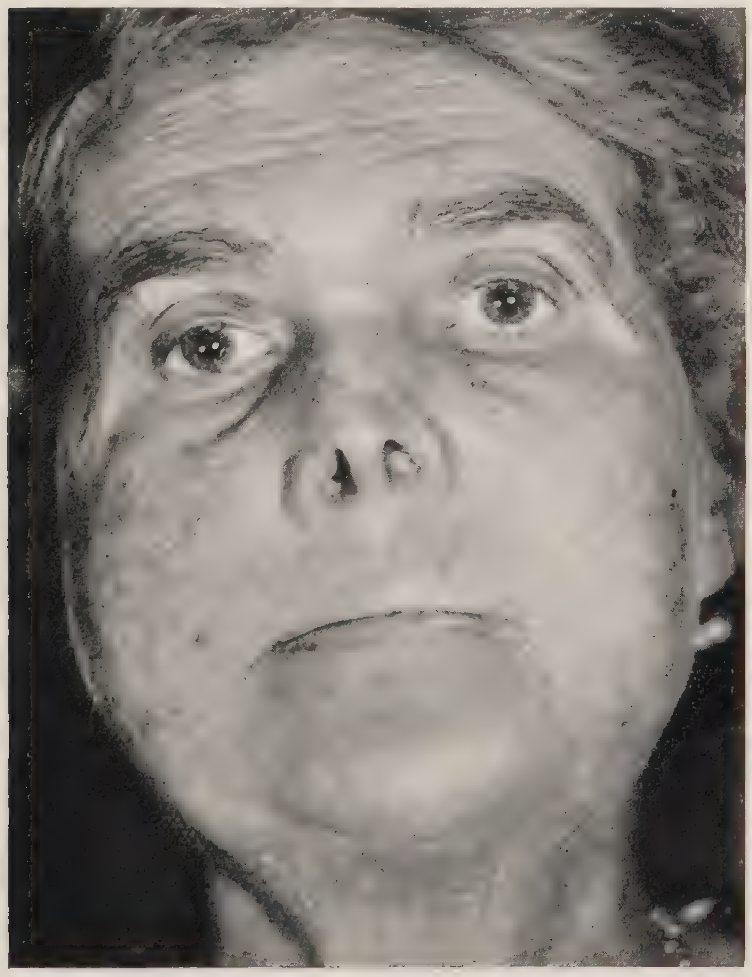
ATTENDANCE OF PATIENTS.

The frequency of attendance of patients depends on several factors, but at eight of the centres the great majority of patients attend twice per week, and at the other five centres thrice per week. Evening sessions are held for the convenience of those patients who are at work and unable to attend the centres during the day.

Of the total patients attending during the year, 82 per cent. were able to continue their normal occupation during the course of treatment, and 32 per cent. were assisted by the payment of railway, bus or tram fares to and from the centres.

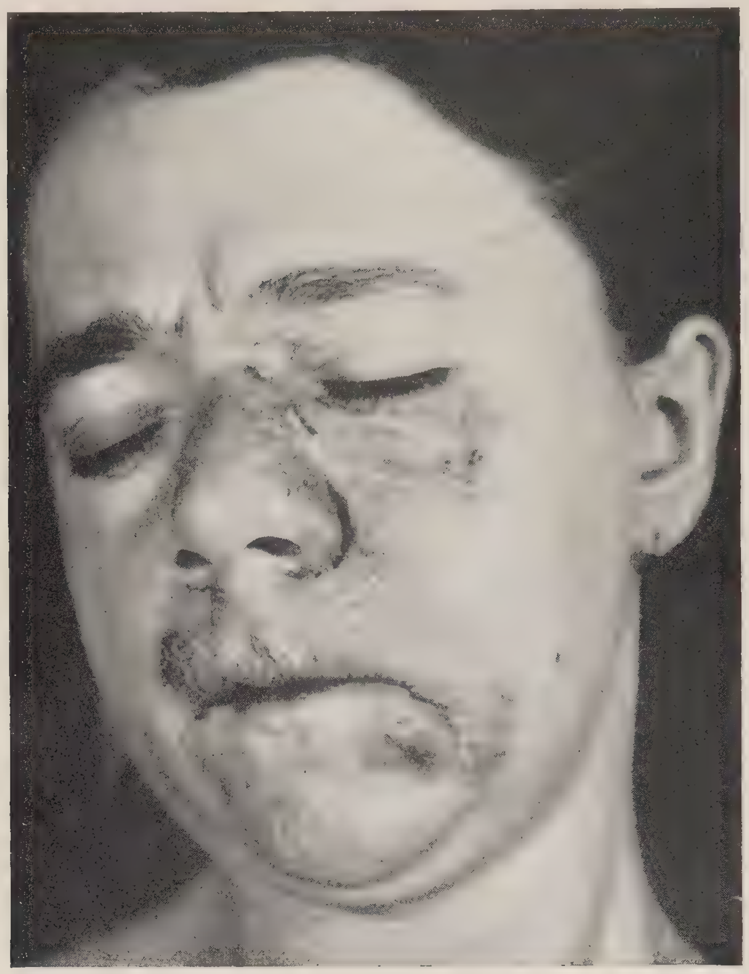


A.L.1(*a*).—E.C., female, aged 64. Duration of disease prior to light treatment, 20 years. Previous treatment, fractional antigens of B. tuberculosis at a skin hospital.

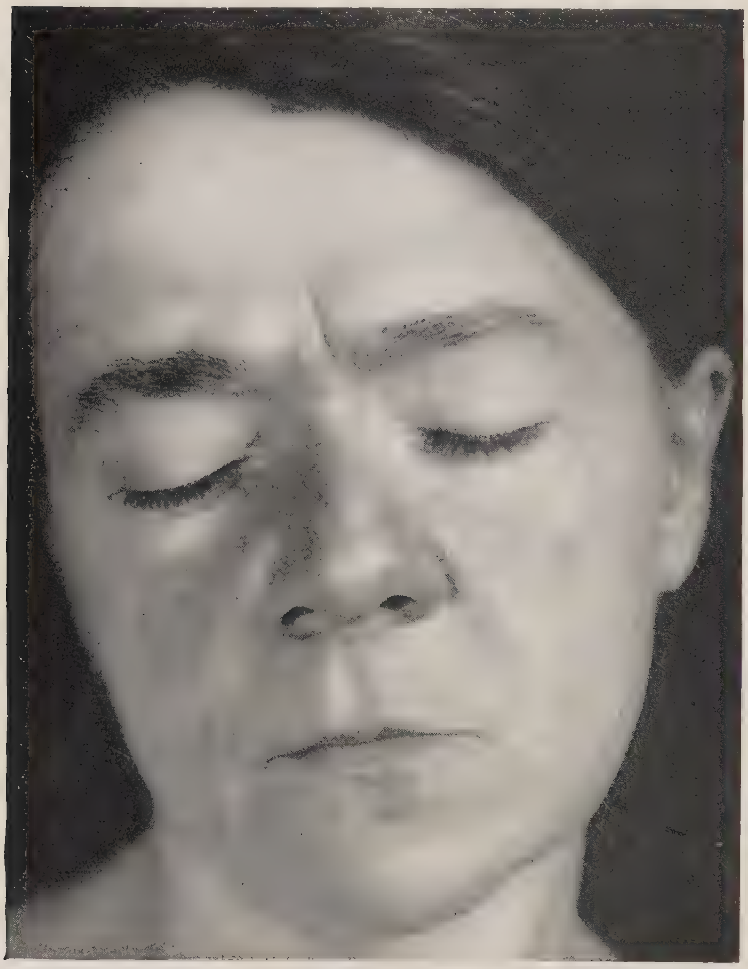


A.L.1(*b*).—Same patient. Photograph taken after 12 months' treatment with general carbon arc. Pigmentation medium. Weight gained, 4¼ lbs.

[*Photographs taken at Nelson Dispensary.*]



A.L.2(*a*).—E.D., female, aged 32. Lupus for 7 years. Previous treatment, ointment and lotions at a skin hospital.



A.L.2(*b*).—Same patient. Photograph taken after five months' treatment at the Eccles Dispensary with carbon arc and Kromayer lamps.

[*Photographs taken at Eccles Dispensary.*]

During 1934, the attendances of patients at the 13 dispensary light centres numbered 29,465.

PHOTOGRAPHIC RECORDS.

In order to record the progress made by patients, photographs have been taken of a number of cases treated by light—at commencement, during the course of treatment, and on termination.

X.—THE DISPENSARY ORGANISATION.

A tuberculosis dispensary should be the centre of activity, for a town or district, in regard to measures for the prevention of the disease, the expert examination and diagnosis of cases, together with the supervision, special treatment, and care of all known tuberculous persons.

For dispensary purposes, the Administrative County is divided into five large areas, average population 315,000, and three small areas (see folding Table A, page 46, and coloured map at the end of this report).

Each large area is in the charge of a consultant tuberculosis officer, and to help the consultant there are two assistant tuberculosis officers, four to seven tuberculosis health visitors, and a clerical staff of two. In each area there is a chief dispensary, and two or more branch dispensaries ; at the chief dispensary is co-ordinated the whole of the work required in that particular area. The County Council have provided in each of these large areas a sanatorium-hospital containing up to 55 beds for the treatment and isolation of patients near their homes. The consultant tuberculosis officer of the particular dispensary area acts as the visiting medical superintendent.

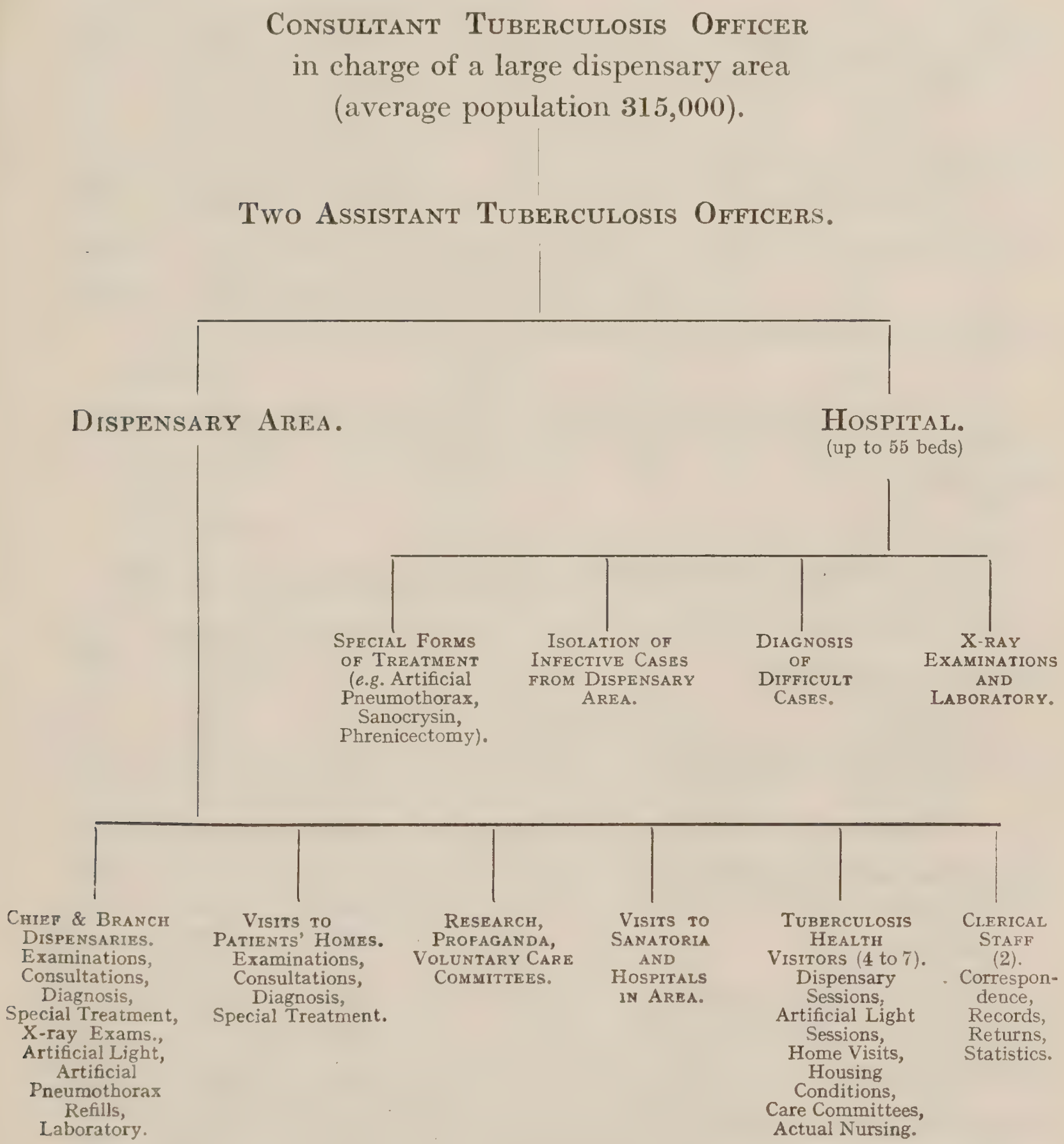
The three small dispensary areas—Furness, Fylde, and Wigan County—are in the charge respectively of the medical superintendent of the High Carley Sanatorium (118 beds for pulmonary tuberculosis), the Elswick Sanatorium (70 beds for pulmonary tuberculosis), and the Wrightington Hospital (226 beds for non-pulmonary tuberculosis and combined cases). These small areas are each equipped with one dispensary.

Thus, the dispensary side of the work is not divorced from the institutional side, or *vice versa*.

The duties of a consultant tuberculosis officer will, therefore, include in any week the holding of dispensary sessions for diagnosis and advice as to treatment ; the visitation in consultation with the medical attendant of patients in their homes for diagnosis and advice as to treatment ; the examination of patients undergoing artificial light treatment at the dispensary centre ; the holding of sessions at the dispensary for x-ray examinations ; the visitation of the pulmonary hospital on four or five days per week for routine and special treatment, and administration; the attendance at meetings of voluntary care committees; arrangement of work with the two assistant tuberculosis officers, the tuberculosis health visitors, and the clerical staff.

THE DISPENSARY ORGANISATION.

The Administrative County is divided into five large dispensary areas. The chart below illustrates the organisation and work of one of these dispensary areas:—


CONSULTANT TUBERCULOSIS OFFICER
in charge of a large dispensary area
(average population 315,000).
TWO ASSISTANT TUBERCULOSIS OFFICERS.
DISPENSARY AREA.
HOSPITAL.
(up to 55 beds)
SPECIAL FORMS OF TREATMENT (e.g. Artificial Pneumothorax, Sanocrysin, Phrenicectomy).
ISOLATION OF INFECTIVE CASES FROM DISPENSARY AREA.
DIAGNOSIS OF DIFFICULT CASES.
X-RAY EXAMINATIONS AND LABORATORY.
CHIEF & BRANCH DISPENSARIES. Examinations, Consultations, Diagnosis, Special Treatment, X-ray Exams., Artificial Light, Artificial Pneumothorax Refills, Laboratory.
VISITS TO PATIENTS' HOMES. Examinations, Consultations, Diagnosis, Special Treatment.
RESEARCH, PROPAGANDA, VOLUNTARY CARE COMMITTEES.
VISITS TO SANATORIA AND HOSPITALS IN AREA.
TUBERCULOSIS HEALTH VISITORS (4 to 7). Dispensary Sessions, Artificial Light Sessions, Home Visits, Housing Conditions, Care Committees, Actual Nursing.
CLERICAL STAFF (2). Correspondence, Records, Returns, Statistics.

The work done through the dispensary organisation during the year 1934 is dealt with further in Chapter XI.

XI.—SUMMARY OF WORK DONE THROUGH THE DISPENSARY ORGANISATION.

Cases Under Supervision.

On the 31st December, 1934, there were on the dispensary registers the following numbers of cases :—

	Males.	Females.	Total.
Pulmonary tuberculosis :			
Under 15 years of age	93	107	200
15 years and over	2,187	1,758	3,945
Non-pulmonary tuberculosis :			
Under 15 years of age	700	648	1,348
15 years and over	869	1,085	1,954
Total Patients on Dispensary Registers ...	3,849	3,598	7,447
Doubtful cases (diagnosis not determined) ...	...	... ...	27

On the estimated population of the Administrative County, namely, 1,807,090, the 7,447 cases represent an incidence of 4·12 per 1,000.

The medical classification* of the 7,447 patients was as under :—

	Disease active.	Disease quiescent.	Total.
Pulmonary tuberculosis :			
T.B. minus	573	957	1,530
T.B. plus 1	310	285	595
T.B. plus 2	1,321	451	1,772
T.B. plus 3	202	46	248
Total	2,406	1,739	4,145
Non-pulmonary tuberculosis :			
Bones and joints	280	404	684
Spine	160	136	296
Abdomen	97	211	308
Other organs	64	79	143
Peripheral glands	372	1,121	1,493
Skin	232	146	378
Total	1,205	2,097	3,302
Total Pulmonary and Non-pulmonary ...	3,611	3,836	7,447

---

* Classification in accordance with Memorandum 37/T (Revised) issued by the Ministry of Health in October, 1930. See Appendix X for definitions.

A further detailed analysis (including age-groups) of the number of tuberculous cases on the dispensary registers is given in Appendix III, from which the following proportions have been calculated :—

	Per 1,000 of child population (0 to 15).		Per 1,000 of adult population (15 and over).
(*a*) PULMONARY TUBERCULOSIS.			
Total number of cases of pulmonary tuberculosis per 1,000 of the population		2·29	
Number of *active* cases per 1,000 of the population ...		1·33	
Number of *quiescent* cases per 1,000 of the population ...		0·96	
Number of *T.B. plus* cases—children	0·03		
adults			1·83
Number of *T.B. minus* cases—children	0·47		
adults			0·95
Of the total cases of pulmonary tuberculosis 4·82 per cent. were children under 15 years of age.			
(*b*) NON-PULMONARY TUBERCULOSIS.			
Total number of cases of non-pulmonary tuberculosis per 1,000 of the population		1·82	
Number of *active* cases—children	1·15		
adults			0·53
Number of *quiescent* cases—children	2·27		
adults			0·84
Number of cases, divided according to the part affected :—			
Bones, joints, and spine—children	0·88		
adults			0·44
Abdomen— children	0·33		
adults			0·12
Peripheral glands— children	2·02		
adults			0·49
Skin— children	0·15		
adults			0·22
Other organs— children	0·02		
adults			0·09

The foregoing proportions show the main factors in the incidence of tuberculosis, and if other authorities published similar information valuable comparisons could be made.

X-RAY EXAMINATIONS.

An x-ray plant for the use of the consultant tuberculosis officer is provided at one of the dispensaries in each of the five large areas. In the small areas, namely, Furness, Fylde, and Wigan County, the x-ray work is carried out at the respective institutions of which the consultant tuberculosis officer is also medical superintendent—High Carley, Elswick and Wrightington.

In October, 1934, a new plant was installed at the Peel Hall Pulmonary Hospital to replace the apparatus transferred to the Chadderton Pulmonary Hospital. New plants were also installed at the Wolstenholme Pulmonary Hospital in January, 1935, and at the Lancaster Pulmonary Hospital in March, 1935.

The following statement shows the x-ray work done at County dispensaries, sanatoria and hospitals during 1934 compared with several previous years :—

TABLE 14.

	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
Dispensary patients :								
Skiagrams ...	4,506	5,519	5,364	5,676	6,045	6,336	6,457	6,729
Screenings ...	733	672	519	854	1,417	2,163	2,638	3,408
Institutional patients :								
Skiagrams ...	333	774	1,320	2,162	2,458	3,763	3,779	3,914
Screenings ...	284	470	840	2,012	2,988	3,418	4,147	4,426
Total	5,856	7,435	8,043	10,704	12,908	15,680	17,021	18,477

The greater amount of artificial pneumothorax treatment for which radiological control is necessary accounts mainly for the increasing number of x-ray examinations.

The policy of placing an apparatus in each dispensary area for use by the tuberculosis officer himself is, from experience, found to be the best method, because the tuberculosis officer, with his knowledge of the patient's history and clinical signs, is most fitted to make a correct interpretation of the skiagrams.

HOUSING.

The following table shows the housing conditions of all patients under treatment or supervision at the end of 1934. Whilst every effort is made to secure that infectious cases occupy a separate room, or at least a separate bed, no useful purpose is served by making the same insistence in regard to patients with the disease quiescent or arrested. The non-pulmonary cases are given separately, and only a very small number indeed may be considered infectious.

TABLE 15.—*Housing statistics of 7,447 County patients.*

	Pulmonary cases considered *infectious.*		Pulmonary cases considered *not infectious.*		Non-pulmonary cases.	
	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.
Patients occupying a separate bedroom ...	6	1,287	44	929	201	549
Patients occupying a separate bed but not a separate bedroom ...	5	500	77	440	568	418
Patients not occupying a separate bed	2*	108*	66	681	579	987
TOTAL	13	1,895	187	2,050	1,348	1,954

* 24 of these 110 cases were isolated in sanatoria or pulmonary hospitals at the end of 1934.

It will be seen that 110 patients (including two children) suffering from pulmonary tuberculosis and considered to be infectious were not occupying a separate bed when at home at the time the census of the housing conditions was taken at the end of 1934. Of this number, 24 were away from home and isolated in pulmonary hospitals or sanatoria, leaving (from a total of 1,908 infectious cases) 86, or 4·5 per cent., infectious cases at home not occupying a separate bed. The percentage in 1933 was 4·5.

Appendix IV. of this report shows the housing conditions of the patients in each dispensary area.

EXAMINATION OF HOUSE CONTACTS.

By the systematic examination of house contacts, particularly the contacts of patients with positive sputum, many early or unsuspected cases of tuberculosis are detected. Owing to indifference or unwillingness, considerable difficulty—which, however, is gradually being overcome—is experienced in persuading contacts to come to the dispensary for examination, or even to submit themselves for examination at all.

By direction of the Ministry of Health, Memo. 37/T (Revised), cases are regarded as contacts only if the cause of their being examined is the fact that they have recently been, or still are, living in contact with some dispensary patient or other notified case; many persons suffering, or suspected to be suffering, from tuberculosis who attend at the dispensary of their own accord, or who are referred by a private medical practitioner, may give a history of previous contact with a known case of tuberculosis, but this does not bring them within the definition of "contacts."

The following Table 16 shows the number of new contacts which have been examined in the Administrative County during 1934:—

	Diagnosed as tuberculous.		Doubtful.	Non-tuberculous.	Total.
	Pulmonary.	Non-pulmonary.			
Examined at home ...	6	1	1	78	86
Examined at dispensary	25	5	3	789	822
Total	31	6	4	867	908
	37				

Of the 908 new contacts examined during the year, 37 were ultimately diagnosed as definite cases of tuberculosis—pulmonary 31, and non-pulmonary 6. These cases are equal to 40·74 per 1,000 of contacts examined, as against the proportion of 4·12 tuberculous persons, per 1,000 of the population, known to the dispensary staff in the County. Thus, the examination of selected contacts revealed many more tuberculous cases proportionately than would be found in the ordinary population.

It may be stated that of the 31 pulmonary cases, 38 per cent. were found to have a positive sputum.

EXAMINATION OF SPUTUM.

As an aid to diagnosis, arrangements are in existence for the examination, free of cost, of specimens of sputum sent by medical attendants. At each chief dispensary a small laboratory is installed for this work, whilst, in addition, an arrangement exists with the Director of the Public Health Laboratory, Manchester, for the examination of specimens including inoculation tests.

The following statement shows the results of the examinations made at the dispensary laboratories in 1934, compared with the previous year :—

	1933.	1934.
Positive (*i.e.*, tubercle bacilli present)	1,719	1,423
Negative (*i.e.*, tubercle bacilli not found)	5,958	5,313
Total	7,677	6,736

In addition to the 6,736 examinations made at the dispensary laboratories, the following work was done during 1934 at the Public Health Laboratory, Manchester :—

Inoculation tests...	72
Inoculation tests and cultivation on Jensen medium ...	4
Cultivation tests alone	6
Sputum examinations	3

TUBERCULOSIS AND THE MILK SUPPLY.

The tuberculosis officers co-operate with the local medical officers of health in regard to any case of tuberculosis in a child in which the milk supply is suspected of being the source of infection. The initial procedure is for the tuberculosis officer to inform the medical officer of health, to ask if he is willing to have a bacteriological examination made of the suspected milk, and to take action, if necessary, on the farm. If the milk is designated, *e.g.*, grade A, then the matter is dealt with by the County Medical Officer of Health.

TUBERCULOSIS OFFICERS' VISITS TO SANATORIA AND HOSPITALS.

Periodical visits (mostly monthly) have continued to be paid by one or other of the consultant tuberculosis officers to the majority of the pulmonary hospitals, non-County sanatoria, and special hospitals treating County patients. These visits are of mutual help, inasmuch as they keep in touch the medical superintendent and the tuberculosis officer, who are able to confer on the patients' future treatment, the home circumstances, the provisions of the County scheme, and so on.

The following is the rota of visits for 1935 :—

Dr. G. H. Leigh	Wilkinson Sanatorium, and Heath Charnock Pulmonary Hospital.
Dr. B. MacPhee	Eastby and Halifax Sanatoria, and Burnley Pulmonary Hospital.
Dr. G. Fletcher	Aitken and Springfield Sanatoria, and Chadderton Pulmonary Hospital.
Dr. G. Jessel	Warwickshire Orthopædic Hospital.
Dr. C. W. Laird	Eccleston Hall and Hefferston Grange Sanatoria, Derwen Cripples' College, and Robert Jones and Agnes Hunt Orthopædic Hospital.
Dr. G. Leggat	Westmorland Sanatorium.
Dr. G. B. Charnock	East Lancashire Tuberculosis Colony.
Dr. E. H. A. Pask	Pemberton Pulmonary Hospital, Liverpool Open-air Hospital for Children, Leasowe, and Royal Liverpool Children's Hospital, Heswall and Thingwall Branches.

PROVISION OF SPECIAL NOURISHMENT.

Special nourishment is granted to tuberculous persons on the following conditions, which have been approved by the Ministry of Health :—

(1) That special nourishment be in no case ordered for a period of more than three months, and if in any case a continuance of the treatment is considered from a medical point of view desirable, the Central Tuberculosis Officer to report the case specially to the County Tuberculosis Committee.

(2) That special nourishment be granted to persons who are waiting for admission to sanatoria or hospitals, or have returned therefrom, when it is thought to be medically essential as part of the cure of the disease.

(3) That special nourishment may be allowed to cases not included in the foregoing, provided that particulars of the cases are laid before the Tuberculosis Committee for consideration.

(4) That each grant of special nourishment will only be allowed by the Tuberculosis Committee subject to the patient carrying out, in a satisfactory way, the medical treatment and such general hygienic measures as may be advised by the medical practitioner and tuberculosis officer.

(5) That special nourishment be limited to orders for new milk and cream, unless on special report other nourishment be found desirable.

(6) That the limit of expenditure be 7/– per week, unless an amount in excess of this sum is specially recommended on medical grounds by the Central Tuberculosis Officer and sanctioned by the Tuberculosis Committee.

During the year, 1,953 grants of special nourishment for varying periods were made to 851 individual patients as part of their medical treatment. The figures in 1933 were 1,677 grants to 781 patients.

Special Surgical Appliances.

During 1934 the following surgical appliances were supplied to patients on the recommendation of the tuberculosis officers :—

Abdominal supports, 4 ; ankle supports, 2 ; artificial limbs, 4 ; back supports, 4 ; celluloid splints, 20 ; crutches, 5 pairs ; hip supports, 2 ; knee splints, 4 ; leather supports, 8 ; leg splint, 1 ; pattens, 2 ; poroplastic splint, 1 ; sacro-iliac belt, 1 ; self-propelling chair, 1 ; spinal cuirass, 1 ; spinal frames, 2 ; spinal jacket, 1 ; spinal supports, 46 ; spinal splints, 2 ; surgical boots, 39 ; surgical corset, 1 ; surgical extension, 1 ; truss, 1 ; urinal, 1 ; walking caliper splints, 19.

Provision of Bedsteads, Mattresses, and Nursing Requisites.

In each County dispensary area a small stock of bedsteads, mattresses (but not bedding), and nursing requisites belonging to the County Council is available for loan to necessitous patients undergoing home treatment.

The bedsteads and mattresses, which are held at the disposal of the consultant tuberculosis officers, have proved of valuable assistance in securing the better sleeping accommodation at home of persons with pulmonary tuberculosis considered to be infectious.

The table following shows the number of these articles owned by the County Council, and also the number of patients who have been granted the use of the articles :—

Table 17.

Articles.	Quantity owned by County Council, 31/12/34.	Number of patients to whom articles have been loaned during 1934.	Articles in possession of patients on 31/12/34.
Bedsteads	224	44	173
Mattresses	216	45	177
Mattress covers	145	30	113
Air beds	5	3	1
Air cushions	164	164	90
Air pumps	3	2	—
Bath chairs	9	5	4
Bed cradles	7	—	—
Bed pans	95	89	41
Bed rests	56	39	24
Bed slippers	74	15	12
Extension apparatus	18	—	—
Fracture boards	2	—	—
Ground sheets	29	2	11
Hot water bottles	6	—	—
Ice bags	1	—	—
Rest chairs	4	1	1
Rubber sheets	22	5	3
Spinal boxes	21	—	—
Spinal carriages	16	6	3
Sponge beds	1	1	—
Urinals...	103	47	37
Water beds	11	6	—

LANCASHIRE COUNTY COUNCIL.

Table A.—List of Tuberculosis Dispensaries in use in October, 1935, and the Tuberculosis Officers for the Dispensary Areas.

Dispensary Area	SANITARY DISTRICTS.			Estimated Civilian Population 1934.	MEDICAL STAFF October, 1935.	NURSING STAFF.	DISPENSARIES	Days and Hours of DISPENSARY SESSIONS (Distinct from Home Visiting, attending Sanatoria, Hospitals and Care Committees, etc.).
1	Adlington Blackrod Carnforth Chorley (B.) Chorley (R.) Fulwood Garstang (R.), Part of, consisting of parishes of— Barnacre-with-Bonds Bilsborrow	Garstang (R.) *cont.* Bleasdale Cabus Catterall Claughton Forton Garstang Kirkland Myerscough Nateby Nether Wyresdale Winmarleigh	Horwich Lancaster (B.) Lancaster (R.) Leyland Longridge Lunesdale (R.) Morecambe & Heysham (B.) Preston (R.) Walton-le-Dale Withnell Acreage 296,167	246,683	Dr. G. H. Leigh, Tuberculosis Dispensary, 8 Middle Street, Lancaster. Assistant Tuberculosis Officer— Dr. F. C. S. Bradbury	Nurse L. Walker	LANCASTER (Chief), 8 Middle Street (Tel. No. 568). (Artificial Light Apparatus).	Monday, 12 noon. Other days and evenings by appointment.
						Nurse F. D. Abbott Nurse G. M. Hunter	CHORLEY (Branch), 34 St. Thomas's Road (Tel. No. 263). (X-ray and Artificial Light Apparatus).	Tuesday morning by appointment. Thursday, 11 a.m. 2nd Tuesday evening of month by appointment.
						Nurse J. Skelcher	PRESTON (Branch), 12 Walton's Parade (Tel. No. 4868. Ext. 226). (Artificial Light Apparatus).	Wednesday, 11 a.m. Monday evening before 2nd Tues. of month by appointment.
2	Accrington (B.) Bacup (B.) Barrowford Blackburn (R.) Brierfield Burnley (R.) Church	Clayton-le-Moors Clitheroe (B.) Clitheroe (R.) Colne (B.) Darwen (B.) Great Harwood Haslingden (B.)	Nelson (B.) Oswaldtwistle Padiham Rawtenstall (B.) Rishton Trawden Turton Acreage 177,027	333,881	Dr. B. MacPhee, Tuberculosis Dispensary, High Lea, 108a Whalley Road, Accrington. Assistant Tuberculosis Officers— Dr. S. C. Adam Dr. W. Fettes (2 days per week)	Nurse L. F. Norwood Nurse E. Watterson	ACCRINGTON (Chief), High Lea, 108a Whalley Road (Tel. No. 2443). (X-ray and Artificial Light Apparatus).	Tuesday, 2 p.m. Wednesday, 2 p.m. Thursday, 10 a.m. x-ray exams. 2nd Tuesday of month, 5-30 p.m.
						Nurse M. Duggan	DARWEN (Branch), 20 Railway Road (Tel. No. 408).	Monday, 10 a.m.
						Nurse A. Munro Nurse H. M. Alcock	NELSON (Branch), 64 Carr Road (Tel. No. 507). (Artificial Light Apparatus).	Tuesday, 2 p.m. Friday by appointment. 1st Friday of month, 5-30 p.m.
						Nurse R. Lambert	STACKSTEADS (Branch), Knott Hill House (Tel. No. Bacup 201). (Artificial Light Apparatus).	Monday, 2 p.m. 1st Monday of month, 5-30 p.m.
3	Ashton-under-Lyne (B.) Audenshaw Chadderton Crompton Denton Droylsden Failsworth Heywood (B.)	Lees Limehurst (R.) Littleborough Middleton (B.) Milnrow Mossley (B.) Prestwich Radcliffe (B.)	Ramsbottom Royton Tottington Wardle Whitefield Whitworth Acreage 81,620	367,448	Dr. G. Fletcher, Tuberculosis Dispensary, Boston House, Warrington Street, Ashton-under-Lyne. Assistant Tuberculosis Officers— Dr. C. Berry Dr. J. L. Armour	Nurse C. Guilfoy Nurse H. Dewsnap Nurse M. Sherwen Nurse W. Swift	ASHTON-UNDER-LYNE (Chief), Boston House, Warrington Street (Tel. No. 1775). (X-ray and Artificial Light Apparatus).	Monday, 10-30 a.m. x-ray exams. Tuesday, 2-30 p.m. Friday, 10 a.m. 1st Tuesday of month, 6-30 p.m.
						Nurse M. A. Potter	MIDDLETON (Branch), 71 Manchester Old Road (Tel. No. 2706).	Friday, 2-30 p.m. 2nd Friday of month, 6-30 p.m.
						Nurse I. F. Macdonald Nurse M. A. Potter	OLDHAM (Branch), 25 Barker Street (Tel. No. Main 1671).	Monday, 2-30 p.m. Wednesday, 10 a.m. 2nd Monday of month, 6-30 p.m.
						Nurse A. Flynn Nurse M. Sherwen Nurse W. Swift	RADCLIFFE (Branch), 41 Darbyshire Street (Tel. No. 2323). (Artificial Light Apparatus).	Wednesday, 2 p.m. 3rd Wed. of month, 6-30 p.m.
						Nurse W. Swift Nurse H. Dewsnap	ROCHDALE (Branch), 168 Drake St. (Tel. No. 3892).	Thursday, 10-30 a.m. 2nd Thurs. of month, 6-30 p.m.
4	Atherton Eccles (B.) Farnworth Golborne Irlam	Kearsley Leigh (B.) Little Lever Stretford (B.) Swinton & Pendlebury (B.)	Tyldesley Urmston Westhoughton Worsley Acreage 58,190	361,900	Dr. G. Jessel, Tuberculosis Dispensary, 13 Church Street, Leigh. Assistant Tuberculosis Officers— Dr. A. B. Jamieson Dr. H. J. Villiers	Nurse I. M. Corfield Nurse M. B. Jones	LEIGH (Chief), 13 Church Street (Tel. No. 258).	Wednesday, 9-30 a.m. Friday, 9-30 a.m. 2nd Thurs. of month, 6-30 p.m.
						Nurse M. Gibson Nurse H. M. Shakespeare	ECCLES (Branch), 28 and 30 Gilda Brook Road (Tel. No. 3533). (X-ray and Artificial Light Apparatus).	Tuesday, 2 p.m.; 2-30 p.m. for x-ray examinations. Thurs., 2-30 p.m. x-ray exams. Friday, 9-30 a.m. 1st Wed. of month, 6-30 p.m.
						Nurse F. G. Smith	FARNWORTH (Branch), 19–23 Darley Street (Tel. No. 63).	Tuesday, 9-30 a.m. Friday, 2 p.m. 3rd Thurs. of month, 6-30 p.m.
						Nurse A. Dickinson	PENDLEBURY (Branch), 121 Station Road (Tel. No. Swinton 1895).	Monday, 2 p.m. Last Thurs. of month, 6-30 p.m.
						Nurse K. Blakemore	STRETFORD (Branch), 14 Derbyshire Lane (Tel. No. Longford 2010).	Tuesday, 9-30 a.m. Thursday, 9-30 a.m. Last Monday of month, 6-30 p.m.
5	Formby Great Crosby Haydock Huyton-with-Roby Litherland	Newton-in-Makerfield Ormskirk Prescot Rainford Skelmersdale	Warrington (R.) Waterloo-with-Seaforth West Lancashire (R.) Whiston (R.) Widnes (B.) Acreage 169,704	263,686	Dr. C. W. Laird, Tuberculosis Dispensary, 7 Claremont Road, Seaforth. Assistant Tuberculosis Officers— Dr. C. H. Lilley Dr. W. Fettes (2 days per week)	Nurse A. Duncan Nurse M. J. McKeown	SEAFORTH (Chief), 7 Claremont Road (Tel. No. Waterloo 688). (X-ray Apparatus).	Monday, 3 to 4-30 p.m. Wed. afternoon by appointment. Thurs., 10-30 a.m. x-ray exams. Friday, 10 to 11-30 a.m. 3rd Thursday of month, 6 p.m.
						Nurse E. Walch Nurse L. Farquhar	ST. HELENS (Branch), 90 Hardshaw Street (Tel. No. 3916). (Artificial Light Apparatus).	Tuesday, 3 to 4-30 p.m. Last Tues. of month, 6 to 7 p.m.
						Nurse M. J. Wilson	WIDNES (Branch), Brendan House, Widnes Road (Tel. No. 156).	Monday, 10 to 11-30 a.m. Friday, 2 to 4 p.m. 1st Wed. of month, 6 to 7 p.m.
Furness	Dalton-in-Furness Grange-over-Sands	Ulverston	Ulverston (R.) Acreage 140,547	38,174	Dr. G. Leggat, High Carley Sanatorium, near Ulverston (Tel. No. Ulverston 110).	Nurse E. A. Duston	ULVERSTON, 69 Albion Place, Lightburn Avenue (Tel. No. 145). (Artificial Light Apparatus). (X-ray Apparatus at High Carley Sanatorium).	Tuesday, 10 a.m. Thursday, 10 a.m.
Fylde	Fleetwood (B.) Fylde (R.) Garstang (R.), Part of, consisting of parishes of— Great Eccleston Hambleton	Garstang (R.) *cont.* Inskip-with-Sowerby Out Rawcliffe Pilling Stalmine-with-Stainall Upper Rawcliffe	Kirkham Lytham St. Annes (B.) Poulton-le-Fylde Preesall Thornton Cleveleys Acreage 74,275	85,967	Dr. G. B. Charnock, Elswick Sanatorium, near Kirkham. Assistant Tuberculosis Officer— Dr. W. Fettes (1½ days per week)	Nurse A. Tweedy	FLEETWOOD, 23 Poulton Road (Tel. No. 282). (Artificial Light Apparatus).	Tuesday, 9 a.m.
							ELSWICK Sanatorium, near Kirkham (Tel. No. Great Eccleston 22). (X-ray Apparatus).	Wednesday, 10 a.m.
Wigan County	Abram Ashton-in-Makerfield Aspull Billinge and Winstanley	Hindley Ince-in-Makerfield Orrell Standish-with-Langtree	Upholland Wigan (R.) Acreage, 40,950	109,351	Dr. E. H. Allon Pask, Wrightington Hospital, Appley Bridge, near Wigan (Tel. No. Appley Bridge 338). Assistant Tuberculosis Officer— Dr. J. E. Wallace	Nurse E. Walters Nurse M. J. Evans	WIGAN, 3 Mesnes Park Terrace (Tel. No. 3172). (Artificial Light Apparatus). (X-ray Apparatus at Wrightington Hospital).	Monday, 9-30 a.m. Thursday, 9-30 a.m. 4th Thurs. of month, 6-30 p.m.
			Total acreage of Admin. County 1,038,480	1,807,090				

TUBERCULOUS EX-SERVICEMEN.

Of the 7,447 patients under supervision of the dispensary staff at the end of 1934, 134 were discharged sailors, soldiers or airmen whose disease was held by the Ministry of Pensions to be attributable to or aggravated by service in the Great War, a pension being granted for the disability. The number of these tuberculous pensioners is declining, falling from 1,017 at the end of 1922 to the figure of 134 mentioned above.

SLEEPING SHELTERS.

There were, at the end of the year, 43 shelters in use by patients at their homes.

The loan of sleeping shelters is made to suitable cases on the recommendation of the tuberculosis officer, after careful consideration of the following points : (1) The condition of the patient and his ability to use the shelter properly ; (2) the position of the shelter ; (3) the home conditions of the patient ; and (4) the means of communication with the nearest inhabited building in case of a sudden relapse.

The number of persons in 1934 who were allowed the use of the shelters was 59.

I have to thank medical officers of health and sanitary inspectors throughout the County for much valuable help in connection with the removal, disinfection, and re-erection of shelters used by County patients.

TUBERCULOSIS DISPENSARIES AND STAFF.

Table A, here inserted, shows the dispensary areas with the populations, present staffs, the addresses of the 24 dispensaries at present in use, and the days and times on which they are open. A coloured map showing the dispensary areas will be found at the end of this report.

EVENING SESSIONS AT DISPENSARIES.

As in previous years, evening sessions have been regularly held at most of the dispensaries for the convenience of patients who are at work during the day.

ARTIFICIAL LIGHT TREATMENT.

A report on the work done at the artificial light centres established at thirteen of the dispensaries is given in Chapter IX.

Statistics Required by Ministry of Health.

By Memorandum 37/T (Revised), issued in October, 1930, the Ministry require certain information concerning the work done at tuberculosis dispensaries. These statistics, in the compulsory Table A of the Memorandum, are given in Appendix V. of this report.

Recovered Cases.

Since 1926 the Ministry of Health have allowed cases of pulmonary tuberculosis to be written off the dispensary register as recovered, provided the disease has been quiescent for two years and arrested for a further three years. During 1934, 222 pulmonary cases were written off the register as recovered; of these, 57 were classified as T.B. plus.

In regard to non-pulmonary tuberculosis, cases may be written off the register as recovered if arrest of the disease has been maintained for at least three years. During 1934, 481 non-pulmonary cases were so written off.

On the other hand, in 1934, 40 cases were restored to the register after having been written off as recovered in previous years; 11 of these were pulmonary cases when originally on the register (3 being classified as T.B. plus), and 29 were non-pulmonary.

Summary of Dispensary Work done by Tuberculosis Officers in 1934, showing comparison with 1933.

Visits by Tuberculosis Officers to Patients' Homes—	1933	1934
(*a*) Number of new persons (including new contacts) examined for diagnosis or expert opinion	1,257	1,215
(*b*) Number of re-examinations of "old" cases and "old" contacts—		
1. Respecting continued general supervision or dispensary treatment	4,009	3,386
2. Contacts respecting diagnosis	20	25
3. Other cases respecting diagnosis	193	142
4. For special forms of treatment or examinations resulting therefrom—		
Aspirations...	7	8
Adjustment of splints and surgical appliances ...	176	270
Lupus cases	42	38
Pneumothorax (refills)	1	—
Mantoux tests	16	7
Other forms	1	—
	5,722	5,091

	1933	**1934**
DISPENSARY ATTENDANCES BY PATIENTS—		
(*a*) Number of new persons (including new contacts) examined for diagnosis or expert opinion	4,306	4,111
(*b*) Number of re-examinations of "old" cases and "old" contacts—		
1. Respecting continued general supervision or dispensary treatment	12,304	12,531
2. Contacts respecting diagnosis	317	288
3. Other cases respecting diagnosis	2,341	2,168
4. For special forms of treatment or examinations resulting therefrom—		
Artificial light (Lancaster, Chorley, Preston, Accrington, Nelson, Stacksteads, Ashton-under-Lyne, Radcliffe, Eccles, St. Helens, Wigan, Ulverston and Fleetwood Dispensaries)	29,981	29,465
Aspirations	116	104
Adjustment of splints and surgical appliances ...	860	882
Lupus cases	478	470
Pneumothorax (refills)	2,149	2,012
Tuberculin	195	331
Moogrol	246	272
Mantoux tests	97	132
Blood sedimentation tests	—	239
Other forms	72	35
	53,462	53,040
X-RAY EXAMINATIONS MADE AT COUNTY DISPENSARIES AND INSTITUTIONS—		
(*a*) Dispensary patients	9,095	10,137
(*b*) Institutional patients...	7,926	8,340
	17,021	18,477
EXAMINATIONS OF SPUTUM AT COUNTY DISPENSARIES	7,677	6,736
NUMBER OF RECOMMENDATIONS BY TUBERCULOSIS OFFICERS—		
1. Sanatorium or hospital treatment	1,734	1,680
2. Dispensary treatment or general supervision	9,221	9,312
3. Provision of special nourishment	1,677	1,953
4. Provision of surgical appliances	170	151
5. Loan of shelters	14	15
6. Diagnosis not confirmed—		
(*a*) Notified cases	140	130
(*b*) Non-notified cases	4	2
7. Cases written off the register as refusing treatment ...	33	25
8. Pulmonary cases written off the register as recovered ...	415	222
9. Non-pulmonary cases written off the register as recovered	510	481
CARE COMMITTEE MEETINGS ATTENDED BY—		
(*a*) Tuberculosis officers	84	77
(*b*) Tuberculosis health visitors	160	142
LECTURES OR ADDRESSES GIVEN ON TUBERCULOSIS	8	9
CONSULTATIONS WITH MEDICAL PRACTITIONERS—		
Personal	667	700
Other	5,668	5,547
VISITS BY TUBERCULOSIS OFFICERS TO SANATORIA, AND PULMONARY, SPECIAL, AND PUBLIC ASSISTANCE HOSPITALS	351	357

	1933	**1934**
Special Visits by Tuberculosis Officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.) ...	82	84
Examinations of Entrants to Industry under Sandstone Industry (Silicosis) Scheme, 1929	27	30
Visits by Dispensary Nurses to Patients' Homes—		
Routine visits	37,247	37,467
Application of surgical dressings...	999	1,083
Adjustment of splints and surgical appliances	1,658	1,498
Other actual nursing	627	1,119
	40,531	41,167
Patients' Dispensary Attendances for Attention by Nurses—		
Application of surgical dressings...	2,600	2,768
Adjustment of splints and surgical appliances	611	567
	3,211	3,335
Percentage of new cases referred by medical practitioners, etc., to tuberculosis officers for an opinion as to diagnosis or treatment *before statutory notification*	89%	90%

XII.—DISPENSARY AREA No. 1
(including Lancaster Pulmonary Hospital).

Area (estimated population 246,683) embraces Lancaster, Morecambe and Heysham, Garstang Rural (part), Preston Rural, Walton-le-Dale, Chorley, and Horwich districts. Lytham St. Annes was transferred from Area No. 1 to the Fylde Area on 1/10/1934.

Consultant Tuberculosis Officer ... DR. G. H. LEIGH.
(Dr. Leigh is also the visiting physician to the Lancaster Pulmonary Hospital).

Assistant Tuberculosis Officer ... DR. F. C. S. BRADBURY.

Dr. Leigh reports as follows :—

The work of the year has been marred by the unfortunate illness and death of Dr. Brunwin who had been in charge of the area since September, 1913. His loss has been sincerely regretted by both the patients and the dispensary staff.

The Mantoux test has not been of much diagnostic value in the majority of cases, but the blood sedimentation test has proved useful and it is hoped to make further use of it in the dispensary work.

Early in the year, a series of lectures was given by Dr. Harley Williams, Medical Commissioner of the National Association for the Prevention of Tuberculosis. Addresses were given at Bamber Bridge, Garstang, Lancaster, and Carnforth to school children in the afternoon and to adults in the evening. The lectures were made attractive and instructive, and were illustrated by well-chosen lantern slides and cinematograph films. Their success was contributed to by the interest taken by local medical officers of health and members of the County Tuberculosis Committee.

During the year, the dispensary premises at Chorley and Preston were replaced by larger and more suitable properties. At Chorley, an x-ray apparatus was installed early in 1935 in order to provide better facilities for the x-ray work of the southern portion of Area No. 1.

Artificial light treatment. Most of the general treatment was given by carbon arc lamps. At Chorley and Preston grade A carbons were used, and at Lancaster grade C carbons. The period of irradiation was up to 60 minutes, and was given twice weekly. The largest number of cases treated were suffering from tuberculous glands, mainly cervical with in some instances skin involvement, and most of them made good progress. The next largest group consisted of skin cases—lupus and scrofuloderma.

LANCASTER PULMONARY HOSPITAL.

The Lancaster Isolation Hospital, built to replace the Luneside Hospital which was closed in October, 1927, is situated on the northern boundary of the Borough of Lancaster. Building operations were commenced by the Lancaster and District Joint Hospital Board in July, 1932, and the first tuberculous patient was admitted on the 11th February, 1935.

By agreement between the Lancashire County Council and the Joint Hospital Board, a separate block was provided for patients suffering from pulmonary tuberculosis. The building contains a duty room, dining-room, scullery-servery, stores, x-ray room, treatment room, washing room, dark room, and dispensary in the centre ; three single and six double cubicles accommodating 15 male patients, with recreation room and sanitary annexe on the east side ; and three single and six double cubicles accommodating 15 female patients, with recreation room and sanitary annexe on the west side. There are also two double sleeping shelters for male patients and one double shelter for females, making a total accommodation for 36 patients (19 males and 17 females). The Joint Hospital Board are responsible for the maintenance and nursing of the tuberculous patients, the County Council paying to them the cost thereof.

The consultant tuberculosis officer for Dispensary Area No. 1 is the visiting physician.

The x-ray apparatus in the tuberculosis block is, for convenience, also used for the dispensary patients from Lancaster and district.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 828 ; doubtful, 9.)	837

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of " *old* " *cases* and "*old*" *contacts.*
Patients' homes	196	1,079
Lancaster Chief Dispensary	169	554
Chorley Branch Dispensary	113	728
Preston Branch Dispensary	106	462
	388	1,744

Attendances of patients at dispensaries for artificial light treatment—

Lancaster Dispensary (25 individual patients)	550	3,522
Chorley Dispensary (77 individual patients)	1,889	
Preston Dispensary (45 individual patients)	1,083	

Attendances for artificial pneumothorax treatment (22 individual patients)		135
Care committee meetings attended by—		
(*a*) Tuberculosis officers		20
(*b*) Tuberculosis health visitors		33
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals		16
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)		18
Visits by dispensary nurses to patients' homes—		
Routine visits	3,859	3,880
Application of surgical dressings	13	
Adjustment of splints and surgical appliances	3	
Other actual nursing	5	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings		616
Sanitary defects reported to the local medical officers of health		2
Disinfections carried out by local sanitary authorities		181
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		91.2%

N.B.—On the 1st October, 1934, Lytham St. Annes was transferred from Area No. 1 to the Fylde Area, and the statistics for the last quarter of 1934 relative to Lytham St. Annes are, therefore, excluded from the above figures.

XIII.—DISPENSARY AREA No. 2
(including Withnell Pulmonary Hospital).

Area (estimated population 333,881) embraces Clitheroe, Colne, Nelson, Burnley Rural, Blackburn Rural, Accrington, Darwen, Haslingden, Rawtenstall, and Bacup districts.

Consultant Tuberculosis Officer ... Dr. B. MacPhee.
(Dr. MacPhee is also visiting medical superintendent of the Withnell Pulmonary Hospital).

Assistant Tuberculosis Officers ... Dr. S. C. Adam and
Dr. W. Fettes (2 days per week).

Dr. MacPhee reports :—

During the year 1934, the administration and work of this dispensary area has proceeded smoothly and satisfactorily along routine lines as in previous years.

On divers dates during the year under review, we were honoured by visits to the Accrington Dispensary from the following gentlemen :—

County Alderman C. J. Trimble.
County Councillor J. H. Smith.
County Councillor J. W. Sunderland.
County Councillor E. Tye.
Dr. J. Alison Glover, Senior Medical Officer of the Board of Education.
Dr. J. Pearse, a medical officer of the Ministry of Health.
Mr. A. P. Hughes Gibbs, a chief inspector of the Ministry of Health.
Dr. E. Donaldson, a medical officer of the Ministry of Health.

The x-ray work, pathological examinations, and artificial pneumothorax treatment have, as hitherto, been centralised and undertaken at the chief dispensary ; 1,090 skiagrams were taken and 325 screenings made, 186 artificial pneumothorax refills were given to 18 patients, and 986 specimens of sputum were examined (168 positive and 818 negative).

Ultra-violet radiation is carried out at the chief dispensary in Accrington and also at the branch dispensaries in Nelson and Stacksteads. The patients' attendances at these light centres have, on the whole, been very regular and, compared with the previous year, there has been a slight diminution in the number of cases treated. None of the cases treated during the year calls for any special comment but, as previously experienced, ultra-violet radiation seems to be most efficacious in those suffering from lupus.

The sending of bacteriological specimens to the Public Health Laboratory in Manchester for special examination in cases of doubtful and difficult diagnosis has again proved helpful ; during the year, 17 specimens were submitted for this purpose, the results being reported as 4 positive and 13 negative. These special examinations consist of inoculation of guinea-pigs and culturing the bacillus on special media.

As a further aid to diagnosis, the Mantoux test was carried out on 11 children during the year.

Experiments with infra-red ray photography as an aid to the detection of the active lesion in cases of lupus are being undertaken. Some little time, however, will require to be devoted to this research before any definite conclusions as to its usefulness can be arrived at.

The County care fund has again proved extremely valuable in assisting necessitous cases. Individual patients or their dependants have been assisted at an approximate cost of £209. The care committee for the districts of Egerton, Eagley and Dunscar has continued its useful work during the year.

On the 29th June, 1935, the dispensary at Accrington was honoured by a visit of 47 delegates to the Annual Conference of the National Association for the Prevention of Tuberculosis held at Southport. They were received by County Alderman E. Boothman, Chairman of the Tuberculosis Committee, who addressed them regarding the activities of the dispensary area, after which they were shown a number of illustrative skiagrams and conducted over the dispensary.

It is with pleasure that I again record the continued co-operation of the medical practitioners, as is evidenced by the bulk of the new cases having been referred for examination and opinion before notification, and I also wish to thank my colleagues, the health visitors, and clerical staff for their valuable help during the year.

WITHNELL PULMONARY HOSPITAL, NEAR CHORLEY.

Matron ... MISS D. WILLMAN.

The County Council in December, 1924, purchased Withnell Hall (including two cottages, outbuildings, and 37 acres of land) situated on the main road from Blackburn to Chorley. The first patient was admitted on the 15th August, 1927. Accommodation is provided for 52 male patients (20 in double cubicles, 8 in single cubicles, 18 in four wards and 6 in shelters). A small treatment block for artificial pneumothorax inductions and refills and minor operations was completed in May, 1933. The hospital serves mainly Dispensary Area No. 2. Three houses were provided on the estate for employees.

The average length of stay of patients at Withnell during 1934 was as under :—

Patients discharged	248 days.
Patients who died in the hospital...	237 days.
Observation cases discharged	24 days.

Dr. MacPhee reports as follows :—

During the year, 58 patients were admitted to the institution, 40 were discharged, and 19 died. In addition, 6 obscure cases were sent in for observation and diagnosis, and 5 were discharged (2 being diagnosed as tuberculous). The percentage of beds occupied during the year was 99.1.

At the institution's laboratory, 658 specimens of sputum were examined with the following results :—Positive, 414, negative, 244.

During the year, 114 skiagrams were taken and 110 screenings made. In addition, 48 skiagrams were taken and 80 screenings made of dispensary patients who, for convenience, attended the institution as out-patients.

The Mantoux test was carried out in several cases sent in for diagnosis, and blood sedimentation tests numbered 35.

In selected cases collapse therapy or gold salts (sanocrysin), or both, were given. I wish to record encouraging results in those patients who received artificial pneumothorax treatment.

Visits were paid during the year by County Aldermen E. Boothman and J. W. Baron in February ; County Alderman C. J. Trimble and County Councillor J. H. Smith on the 5th April ; Dr. J. Alison Glover, Senior Medical Officer of the Board of Education, Dr. J. Pearse, a medical officer of the Ministry of Health, and Mr. A. P. Hughes Gibbs, a chief inspector of the Ministry of Health, on the 11th May ; Dr. E. Donaldson, a medical officer of the Ministry of Health, on the 25th September ; and County Councillors E. Tye and J. W. Sunderland on the 8th November. A meeting of the consultant tuberculosis officers of the County Council, under the chairmanship of Dr. Cox, was held at the hospital on the 13th December, 1934.

The treatment block, completed last year, has proved a valuable asset to the institution.

The wireless installation was completely reorganised and renovated, and is a great boon to the patients, each bed having headphones.

Recreation and work were again organised, having in view their good mental and therapeutic value in the treatment of the disease.

The library was augmented during the year with new books, bought by the grant kindly made by the Tuberculosis Committee, and by supplies from the British Red Cross Society.

An addition is being made to the recreation room by the provision of a reading room, two dressing rooms, and a larger stage. These improvements will be greatly appreciated by the patients themselves and also by the artistes who come to the institution from time to time to entertain the patients.

For the patients' benefit the matron again organised a very enjoyable motor coach trip to the Lake District, which included a sail up the lake by steamer to Ambleside. The patients eagerly look forward to these annual excursions which are much appreciated.

One probationer nurse gained the certificate of the Tuberculosis Association in November.

Throughout the year, the behaviour of the patients on the whole has, as usual, been exemplary.

I have pleasure in placing on record my appreciation of the help of my colleagues, the matron and the staff.

On the 29th June, 1935, the institution was honoured by a visit of 75 delegates to the Annual Conference of the National Association for the Prevention of Tuberculosis held at Southport. They were received at Withnell by the Chairman of the Tuberculosis Committee, County Alderman E. Boothman, and subsequently entertained to lunch in a marquee erected on the lawn. After lunch the activities of the institution were explained, and the party was conducted round the buildings and grounds.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 1,127 ; doubtful, 4.) 1,131

Examinations by tuberculosis officer at—	**Examinations of *new persons* and *new contacts* for diagnosis.**	**Re-visits or re-attendances of " *old* " *cases* and " *old* " *contacts*.**
Patients' homes	**244**	**248**
Accrington Chief Dispensary	**304**	**903**
Darwen Branch Dispensary	**71**	**147**
Nelson Branch Dispensary...	**212**	**593**
Stacksteads Branch Dispensary	**120**	**561**
	707	**2,204**

Attendances of patients at dispensaries for artificial light treatment—

Accrington Dispensary (53 individual patients)	**2,546**	**7,015**
Nelson Dispensary (55 individual patients)	**2,586**	
Stacksteads Dispensary (38 individual patients)	**1,883**	

Attendances for artificial pneumothorax treatment (18 individual patients) . . 186

Lectures or addresses given		2
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals		49
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)		8
Visits by dispensary nurses to patients' homes—		
Routine visits	5,949	6,689
Application of surgical dressings	150	
Adjustment of splints and surgical appliances	260	
Other actual nursing	330	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings	962	1,287
Adjustment of splints and surgical appliances	325	
Sanitary defects reported to the local medical officers of health		18
Sanitary defects which after notification were remedied		17
Disinfections carried out by local sanitary authorities		1,549
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		96·6%

XIV.—DISPENSARY AREA No. 3
(including Wolstenholme Pulmonary Hospital).

Area (estimated population 367,448) embraces Ramsbottom, Littleborough, Radcliffe, Heywood, Crompton, Royton, Prestwich, Middleton, Chadderton, Failsworth, Ashton-under-Lyne, Mossley, and Denton districts.

Consultant Tuberculosis Officer ...	DR. G. FLETCHER.

(Dr. Fletcher is also visiting medical superintendent of Wolstenholme Pulmonary Hospital).

Assistant Tuberculosis Officers ...	DR. C. BERRY and DR. J. L. ARMOUR.

Dr. Fletcher reports :—

There was no event of outstanding importance to record in the work of the dispensary during 1934.

In February, Mr. C. E. James, of the Natal Anti-Tuberculosis Association, paid a visit to our chief dispensary at Ashton-under-Lyne and investigated its various activities.

In past years reference has been made to the unsatisfactory premises used for dispensary purposes at Ashton-under-Lyne and Oldham. The matter has at last been dealt with, for the County Council in August, 1935, decided to put up new buildings both at Ashton-under-Lyne and Chadderton to replace the existing dispensaries at Ashton-under-Lyne and Oldham.

The care committees were active during the year. At Ashton-under-Lyne, the local committee assisted 66 cases at a cost of £222 2s. 8d.; one case was assisted by the Prestwich Care Committee at a cost of £4 13s. 10d.; and the Radcliffe and Whitefield Relief Fund for Consumptives dealt with 24 cases at a cost of £138 17s. 11d. The annual dance of the Ashton-under-Lyne and District Care Committee was held successfully in January, and the proceeds of a special concert arranged by the Chairman (Councillor E. Broadbent) were devoted to the work of the Committee. On the 12th June, the Ashton-under-Lyne Committee paid a visit to the East Lancashire Tuberculosis Colony, Barrowmore Hall, near Chester, where Dr. Sandiland kindly explained the arrangements for the treatment of patients and the settling of colonists.

In the areas not covered by voluntary care committees, the County care fund assisted 77 cases at a cost of £177 9s. 10d.

A tuberculosis section was provided during the health week exhibition at Middleton in October. In September an address was given to the Manchester Medical Ethical Society on the work of a tuberculosis officer.

During the year, 1,952 skiagrams of dispensary patients were taken at Ashton-under-Lyne Dispensary, as compared with 1,918 in 1933; in addition, 104 skiagrams were taken of County patients from Aitken Sanatorium, and Chadderton and Wolstenholme Pulmonary Hospitals.

At this dispensary also, 1,218 specimens of sputum were examined, 320 being positive and 898 negative.

The numbers of patients attending the light centres at Ashton-under-Lyne and Radcliffe continue to show a decrease. The methods of treatment are now well established, and the results obtained show no noteworthy difference from those of former years. Observation visits were paid to the dispensaries by 115 cases which had been successfully treated by artificial light.

For purposes of consultation, monthly visits were made to Aitken Sanatorium and Chadderton Pulmonary Hospital, and similar visits have been paid to Springfield Sanatorium since its opening in November.

I have pleasure in again recording my appreciation of the co-operation of the medical practitioners in this area, and of the assistance of the medical, nursing, and clerical members of the area staff.

WOLSTENHOLME PULMONARY HOSPITAL, NORDEN.

Matron ... ... MISS E. G. GLASS.

The County Council, on the 1st July, 1933, took over from the Rochdale Corporation Wolstenholme Hall, Norden, which had been used by them as a pulmonary hospital for 45 adult male patients of whom 25 to 30 were sent by the County Council. The estate is situated on the Edenfield road, 3½ miles west of Rochdale, and contains 7¼ acres of land with two cottages and outbuildings. The County Council have erected entirely new buildings for the treatment of 55 male patients accommodated as under:—8 in single cubicles, 20 in double cubicles, 23 in five wards, and 4 in double sleeping shelters. The new buildings contain an x-ray room, dark room, laboratory, operating theatre, sterilising room, dining room, servery, two nurses' duty rooms, two linen stores, patients' locker rooms, sluice rooms, and lavatory accommodation. A recreation room, reading room, and dressing rooms have been provided in a separate building. The Hall has been adapted for housing the nursing and domestic staffs and for other administrative purposes.

The capital cost of the scheme is £17,811 10s. 0d., representing £324 per bed. Plans of the new buildings were reproduced in the last annual report.

Of the 55 beds, the County Council have undertaken to lease to the Rochdale Corporation 25 beds.

The average length of stay of patients at Wolstenholme during 1934 was :—

Patients discharged	194 days.
Patients who died in the hospital	53 days.

Dr. Fletcher reports as follows :—

During the year 71 County cases were admitted, 60 were discharged and 21 died. Of the 60 cases discharged, 9 were transferred to other institutions.

The work was carried on during most of the year in the old buildings; the transfer to the new block took place in December and the change was much appreciated by the patients and the staff.

Much progress was made in the laying out of the grounds.

By the end of the year greater facilities were secured for the recreation of the patients and many new books were added to the library.

More regular visits to the institution were made by the clergy of the various denominations.

A course of lectures was delivered to the nurses during the year.

The x-ray work, pending completion of the new buildings, was carried out at Ashton-under-Lyne Dispensary, where 68 skiagrams were taken; at that dispensary also 318 sputum examinations were made, of which 238 were positive and 80 negative.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 1,485 ; doubtful, 4.)	1,489

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of "*old*" *cases* and "*old*" *contacts*.
Patients' homes	215	423
Ashton-under-Lyne Chief Dispensary ...	425	1,959
Middleton Branch Dispensary	72	384
Mossley Branch Dispensary (Closed 31/3/34.)	5	23
Oldham Branch Dispensary	250	1,134
Radcliffe Branch Dispensary	200	743
Rochdale Branch Dispensary	161	553
	1,113	4,796

Attendances of patients at dispensaries for artificial light treatment—		
Ashton-under-Lyne Dispensary (99 individual patients)	3,842	4,991
Radcliffe Dispensary (31 individual patients)	1,149	
Attendances for artificial pneumothorax treatment (33 individual patients)		378
Care committee meetings attended by—		
(*a*) Tuberculosis officers		10
(*b*) Tuberculosis health visitors		8
Lectures or addresses given		2
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals		112
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)		9
Visits by dispensary nurses to patients' homes—		
Routine visits	8,713	9,377
Application of surgical dressings	43	
Adjustment of splints and surgical appliances	459	
Other actual nursing	162	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings	73	214
Adjustment of splints and surgical appliances	141	
Sanitary defects reported to the local medical officers of health		65
Sanitary defects which after notification were remedied		25
Disinfections carried out by local sanitary authorities		383
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		86·6%

XV.—DISPENSARY AREA No. 4

(including Peel Hall Pulmonary Hospital).

Area (estimated population 361,900) embraces Westhoughton, Atherton, Farnworth, Leigh, Swinton and Pendlebury, Eccles, and Stretford districts.

Consultant Tuberculosis Officer ... DR. G. JESSEL.

(Dr. Jessel is also visiting medical superintendent of Peel Hall Pulmonary Hospital).

Assistant Tuberculosis Officers ... DR. A. B. JAMIESON and DR. H. J. VILLIERS.

Dr. Jessel reports :—

It is interesting to compare the work at our clinics to-day with the position twenty years ago. Now, as then, the main functions of the dispensary are (1) diagnosis, (2) the placing of patients under treatment, and (3) preventive work by means of the examination of contacts and the education of the public.

Diagnosis is now much more precise and less a matter of speculation than it used to be, thanks to the utilisation of modern methods and especially to radiology, but the time is far distant when it will be possible for accurate diagnosis to be made as easily as the reading of photographic exposures from a modern photo-electric cell-meter ; in other words, the new methods provide pitfalls for the unwary, and the experience and judgment of the physician have not yet been superseded. Modern scientific methods provide valuable aids in the examination of patients and the fullest possible use is made of them. Each new case is fully investigated from every point of view, and the medical staff of the area meet together twice a week and weigh carefully all the available evidence. Similarly, the old cases are regularly reviewed and, as an addition to ordinary clinical methods, serial skiagrams and blood sedimentation tests are made.

The confidence of the medical practitioners is shown by the large number of cases referred for diagnosis and also by the fact that the doctor is nearly always present when I see a case at home. It is not a matter of doctors sending patients in order to evade the trouble of making what may be considered a reasonable examination ; practically all the patients who come undoubtedly have presented some difficulty in diagnosis. Moreover, it is now understood that we are not content merely with a negative diagnosis as regards tuberculosis ; we endeavour to tell the doctor what is the correct diagnosis, which is more useful to him. This means that a tuberculosis clinic is really a general medical clinic because it is impossible to consider the question of tuberculosis without all the other possible diseases, with which tuberculosis may be confused, being carefully considered.

Each year a large number of interesting cases are brought to light and, as usual, particulars of one or two of them, with reproductions of skiagrams, are included and will be found between pages 66 and 67.

Artificial pneumothorax refills. Attendances increased in 1934 to 669, the number of individuals attending our Eccles Clinic being 53. Refills are given at three sessions a week—two in the day time and one in the evening.

Contacts. As in the past, we have continued to examine contacts whenever this could be usefully done. There is little advantage in examining all and sundry, and the routine examination of large numbers of children is a waste of time as pulmonary tuberculosis in childhood is rare. Moreover, children come under the purview of the child welfare and school medical officers who refer doubtful cases to us. The examination of suspects and particularly of adolescents is, however, important. Sometimes contact examination is desirable, not from the point of view of finding secondary cases due to a previous primary case, but of discovering the source of infection of a case, *e.g.*, in tuberculous meningitis. The following is an illustration :—

G.C., aged 10 years, was certified from a large general hospital as having died from tuberculous meningitis. As in four out of five such cases the infection is human and not bovine, efforts were made to examine other members of the family. As a result it was found that the *mother*, although apparently in good health, showed on x-ray examination of the lungs that she had some years ago suffered from pulmonary tuberculosis of a mild character, there being some scattered calcified nodules on the right side (see skiagram E. 1). She had no physical signs and, as far as she knew, had not been ill. This is a case where the mother, suffering from pulmonary tuberculosis of a mild type without being aware of it, had probably unwittingly infected her child.

I have long felt that it should be possible to demonstrate statistically the value of the intensive measures that have been in force for several years with a view to securing more accurate diagnosis and better treatment. The preparation of convincing figures on any subject, which would satisfy a statistician is, of course, a difficult matter, as many factors have to be taken into account. A preliminary investigation has, however, been attempted with a view to obtaining information as to the duration of life of patients in this area from the time they were brought to our notice to the time of their decease. For this purpose we have taken the deaths occurring in T.B. plus cases only during the period 1924–34, and have worked out the interval between the date they were first examined in connection with the dispensary and the date of death.

TABLE 18.—*Average interval between date of first examination by Tuberculosis Officer and death of T.B. plus cases dying during the years 1924–34.*

Year.	Males.		Females.		Both sexes.	
	Number of deaths.	Average period between date patient first examined by T.O. and death.	Number of deaths.	Average period between date patient first examined by T.O. and death.	Number of deaths.	Average period between date patient first examined by T.O. and death.
		Months.		Months.		Months.
1924	95	10·8	72	10·8	167	10·8
1925	87	14·5	72	15·4	159	14·9
1926	88	15·0	78	21·0	166	17·9
1927	108	20·0	79	20·0	187	20·0
1928	95	19·8	72	22·9	167	21·3
1929	93	26·0	80	21·0	173	23·8
1930	75	20·4	74	25·2	149	22·8
1931	88	24·0	51	23·5	139	23·8
1932	60	34·9	58	19·7	118	27·4
1933	92	31·9	55	20·3	147	27·6
1934	66	32·1	63	28·1	129	30·1

The results are very interesting and show that during this period, taking both sexes together, the average length of life increased from 10·8 months as regards deaths occurring in 1924, to 30·1 months as regards deaths occurring in 1934, *i.e.*, in eleven years the duration of life of T.B. plus cases in this area had increased two-and-a-half times. It does not matter for our purpose whether this is due to earlier and more accurate diagnosis or to better treatment in our institutions and the thorough supervision of the patients after discharge in connection with our dispensaries; in either case, it would have been due to anti-tuberculosis measures. During this period, the general death-rate has not decreased two-and-a-half times and it would appear that the facilities provided under the County tuberculosis scheme are largely responsible for the marked improvement.

Artificial light treatment. During the year, 96 cases were treated and 42 of these were discharged as quiescent. These figures show a decrease on previous years, and at the beginning of 1935, 34 cases were under treatment, but at the time of writing (June, 1935) the number had increased to 50. Nine relapsed cases were treated, the average interval since the termination of the previous course of treatment being 31 months. Thus, light treatment, like other forms of treatment in tuberculosis, does not guarantee a permanent cure if the environmental or other circumstances are unfavourable. The object of treatment is, of course, to stimulate the patient's resistance with a view to bacilli being kept in check. It is noteworthy, however, that the great majority of cases do not relapse. Ship and Morgan carbons are at present being used.

Mantoux tests. Increasing use is being made of the Mantoux test and the accompanying table shows what has been done during the year. Positive results are, of course, of little significance apart from showing the presence of tuberculous infection. Negative results are of great value because, with a few exceptions, they definitely exclude the presence of infection. When children are referred to us as suspected cases of tuberculosis and the Mantoux test is found to be negative, we do not now x-ray their chests. Furthermore, a negative Mantoux test is sometimes found in cases which have been notified as suffering from tuberculosis and thereby expensive institutional treatment is rendered unnecessary, apart from the inconvenience to the patient. The following is a case in point :—

S.D., aged 4 years. Notified from a children's hospital as suffering from tuberculous knee. There was history of otorrhœa on the left side followed by swelling of the left knee. On examination there was no flexion of the knee. Scars of recent healed incisions were found on either side of the affected knee. There was no obvious limitation of movement and no pain on passive movement. The skiagram showed erosion of the external aspect of the outer condyle of the femur with rarefaction (see skiagram E.2). The Mantoux tests were negative in concentrations of 1/10,000, 1/1,000, 1/100, and 1/10, and a diagnosis of non-tuberculous arthritis was therefore made.

In cases of likely susceptibility we start with a dilution of 1/10,000, but a child is not regarded as negative unless the test is negative in a dilution of 1/100.

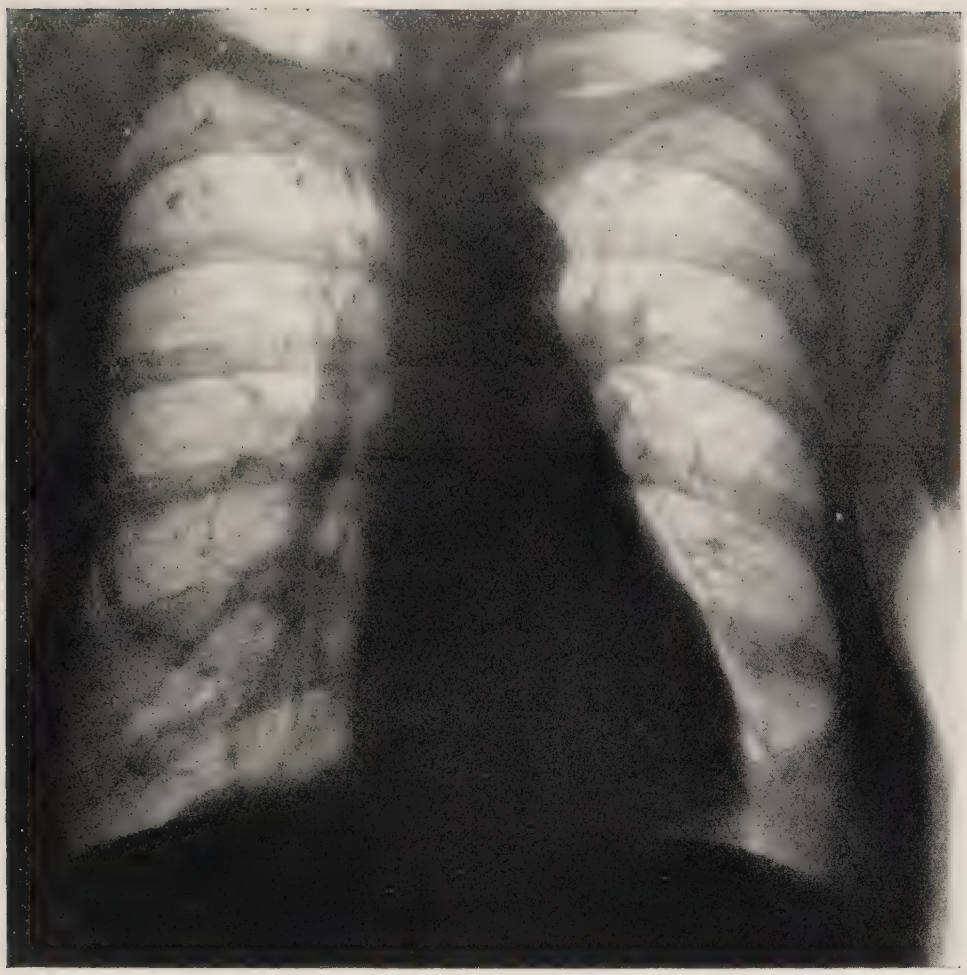
We are now Mantoux testing all children under 15 years of age who come to our notice, whether notified cases, cases referred for diagnosis, or contacts.

TABLE 19.—*Mantoux tests of children from January, 1934, to June, 1935.*

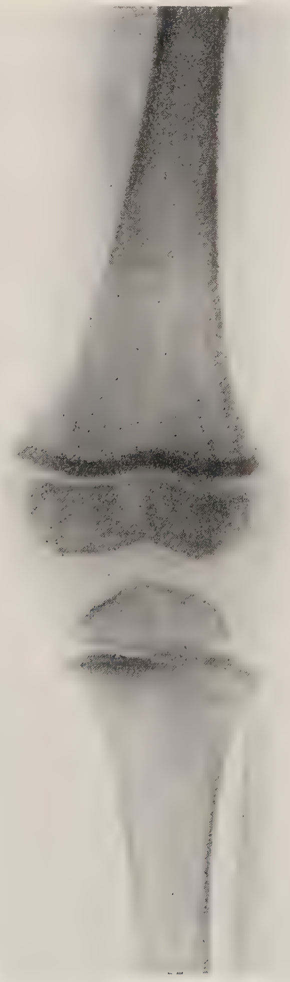
Negative results.

Age-groups.	Dilutions.			
	1/10,000	1/1,000	1/100	1/10
0 to 5 years	8	16	2	1
5 to 10 years	13	20	2	—
10 to 15 years	3	—	—	—
Total...	24	36	4	1

Blood sedimentation. For some years blood sedimentation tests have been made at the Peel Hall Hospital and during the last two years such tests have been carried out systematically at our dispensaries. The method of Westergren has been used throughout and has been found to be easy and reliable. The procedure is as follows :—0·5 c.c. of 3·4 per cent. sodium citrate is drawn up into a 2 c.c. syringe ; from a convenient anti-cubital vein, blood is drawn into the syringe up to

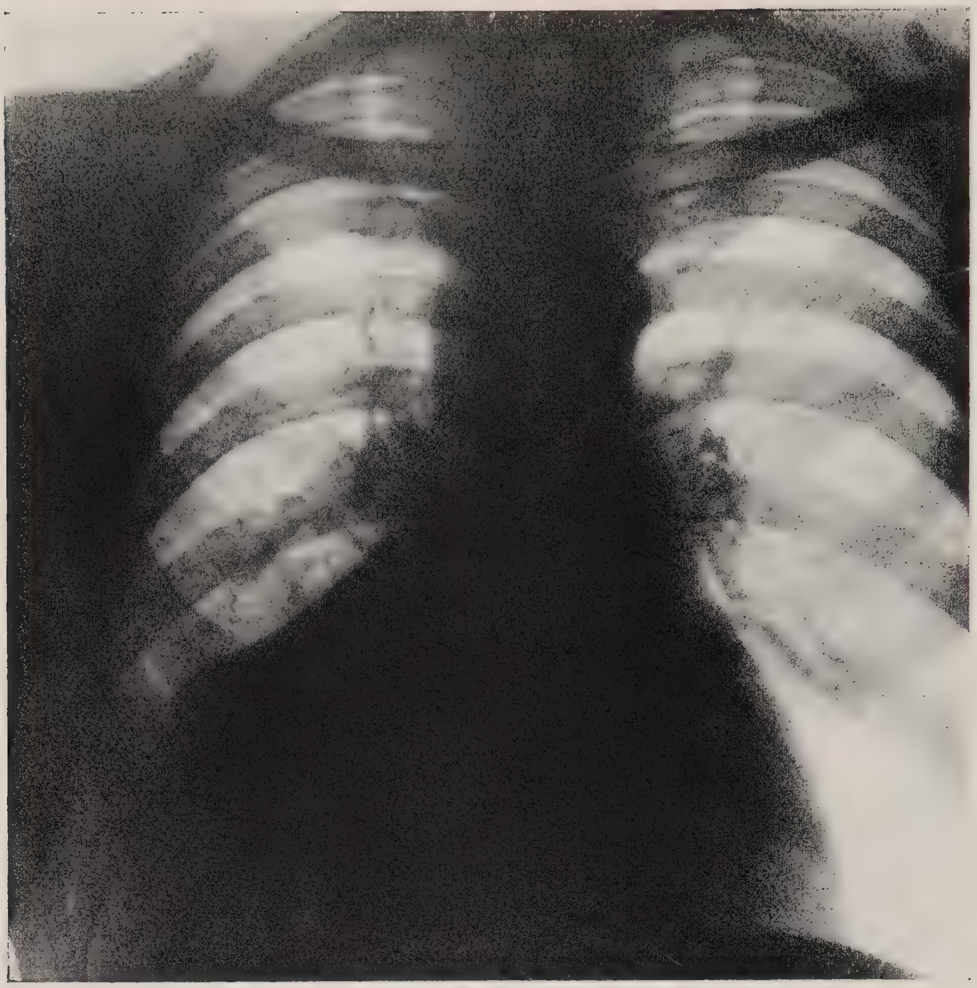


E.1.—R.C., female, aged 40. Examined as a contact (child having died from tuberculous meningitis). Apparently well and no symptoms. X-ray shows small calcified area right upper zone. (See further notes on page 64.)

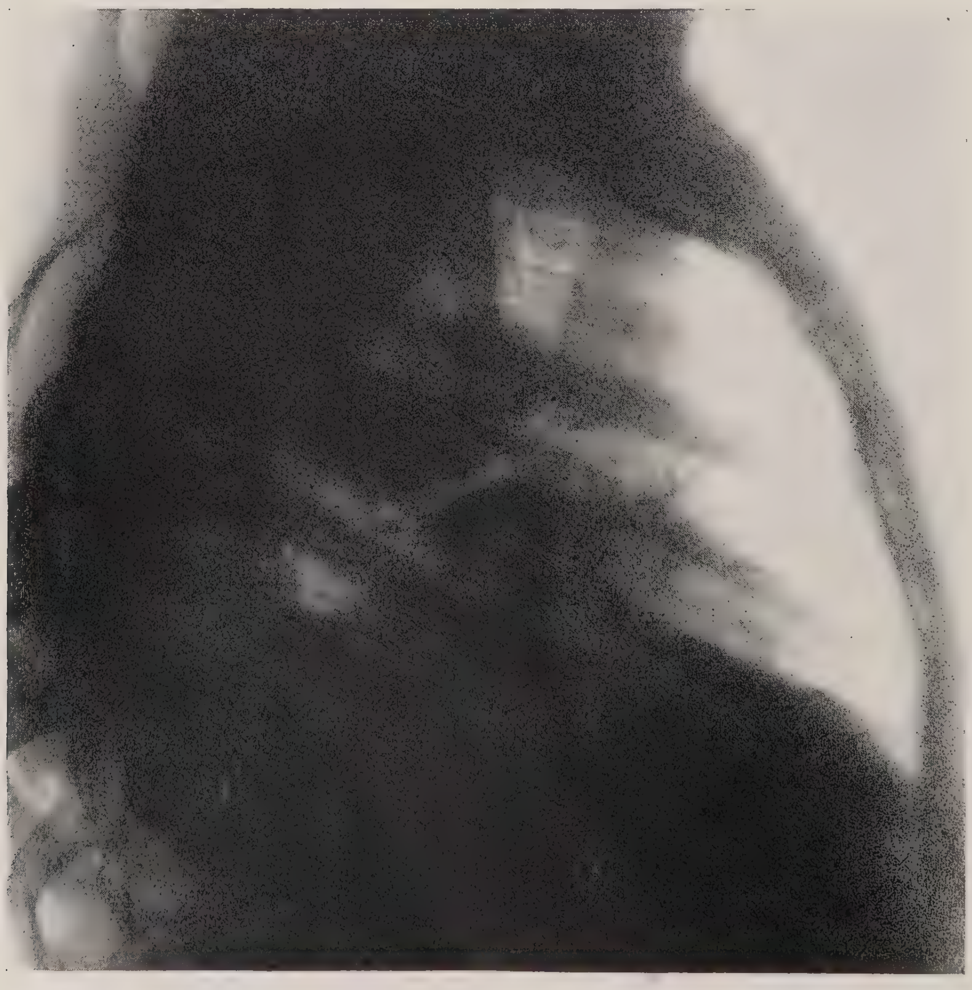


E.2.—S.D., male, aged 4. Notified from children's hospital as tuberculous knee. Skiagram shows erosion of outer condyle of femur, with rarefaction. Mantoux test negative as high as 1/10 dilution. Diagnosis: Non-tuberculous arthritis.

[*Skiagrams taken at Eccles Dispensary.*]

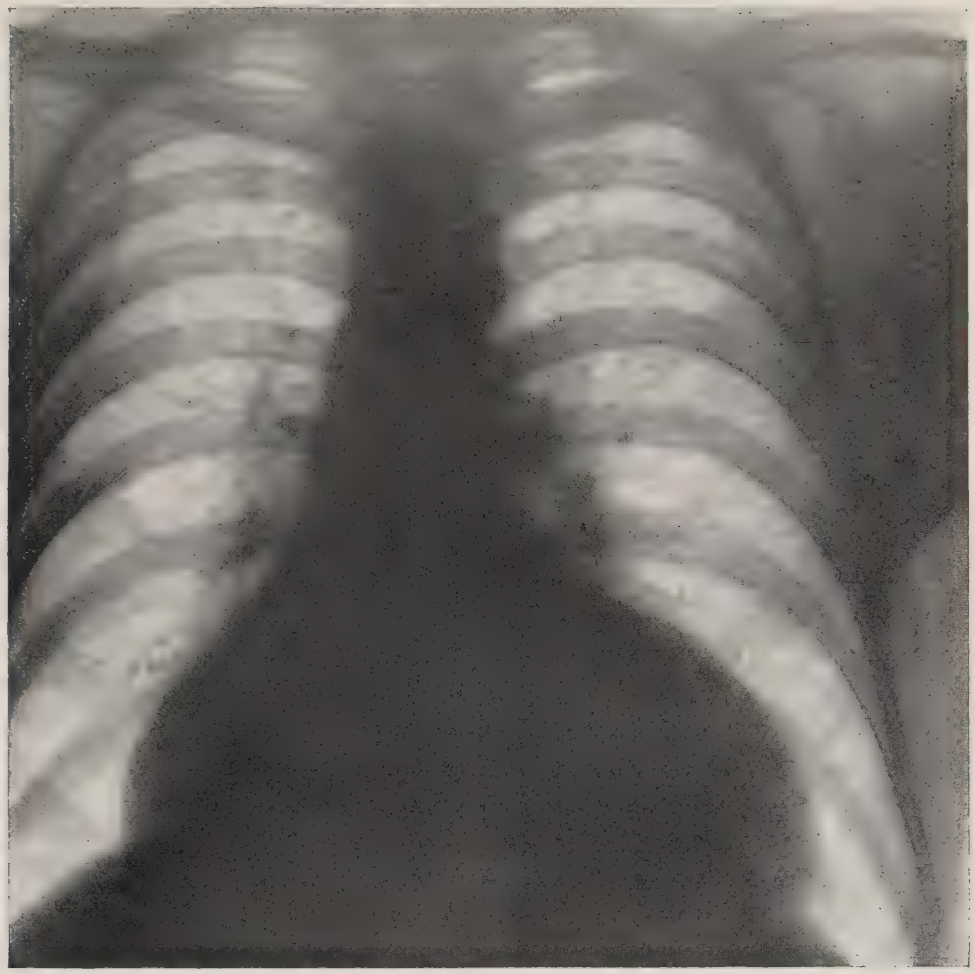


E.3(*a*).—W.O., male, aged 45. History: Worked in iron and stone dust; cough and bronchitis for years. Physical signs: Impaired percussion note over base of right lung, with patch of blowing breath sounds. Sputum (muco-purulent) persistently negative. Skiagram shows an opacity, continuous with heart shadow, with sharp upper margin sloping downwards, but not extending to the periphery.

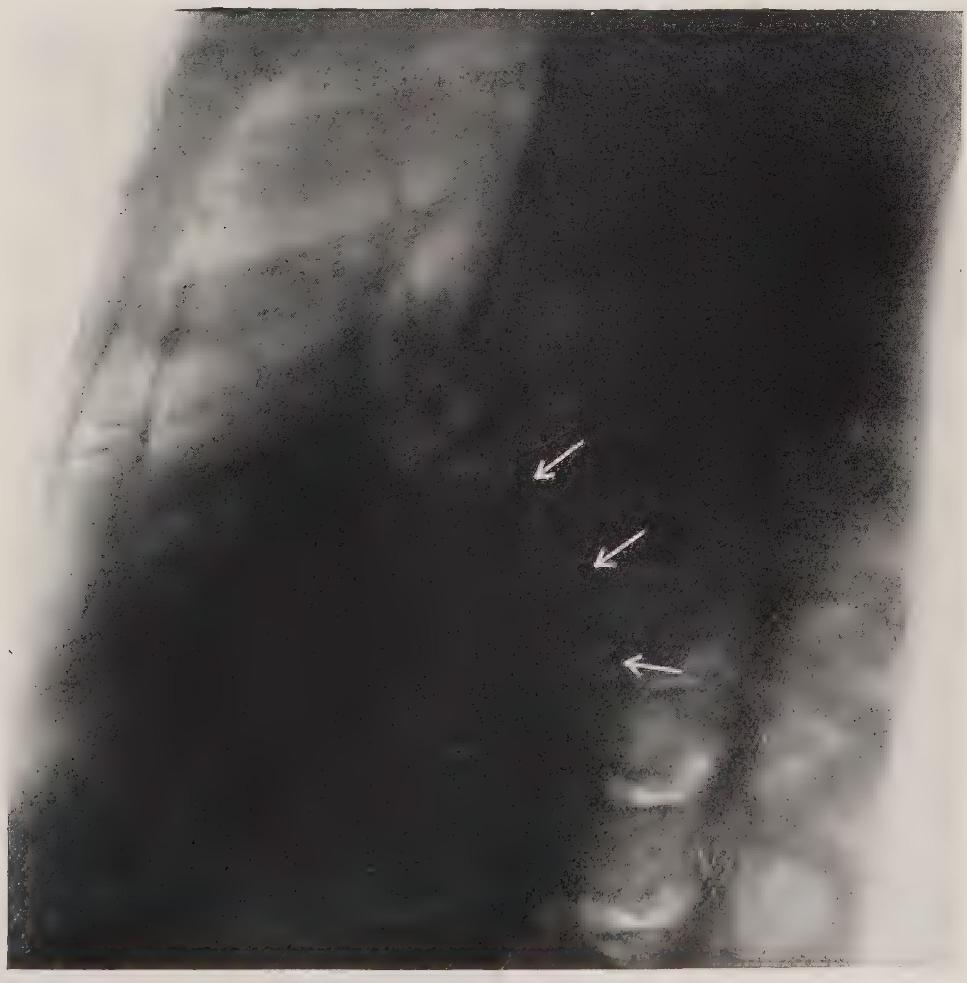


E.3(*b*).—Same patient. Lateral view shows that the shadow lies mesially. Diagnosis: Mediastinal effusion, partial atelectasis, abscess of lung.

[*Skiagrams taken at Eccles Dispensary.*]

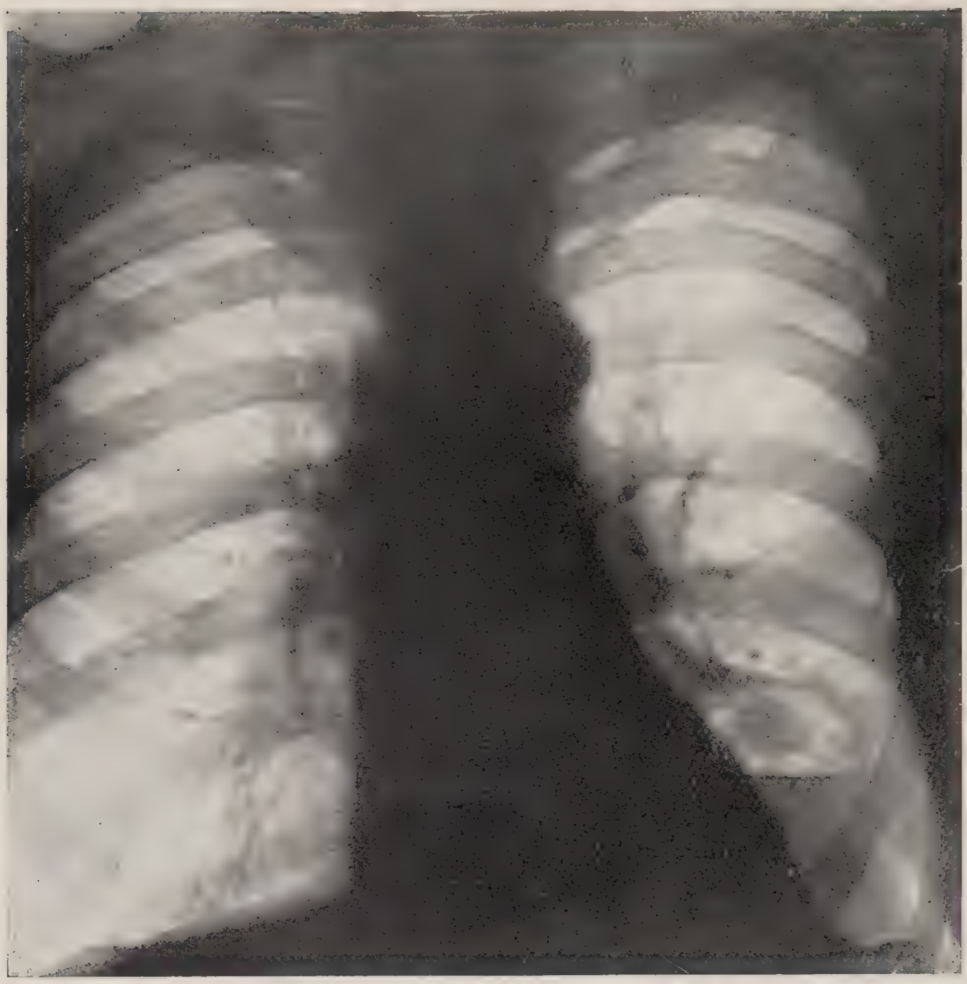


E.4(*a*).—J.W., male, aged 44. History: Right side of chest crushed in accident 7 years ago; recurring pain in chest since. Symptoms: Chiefly attacks of dyspnœa. Physical signs: Greatly enlarged area of definite dullness on both sides of heart. Sputum negative. Skiagram shows an opaque area on either side of heart, less dense than heart shadow itself, similar to that seen in partial atelectasis of lower lobe of lung.

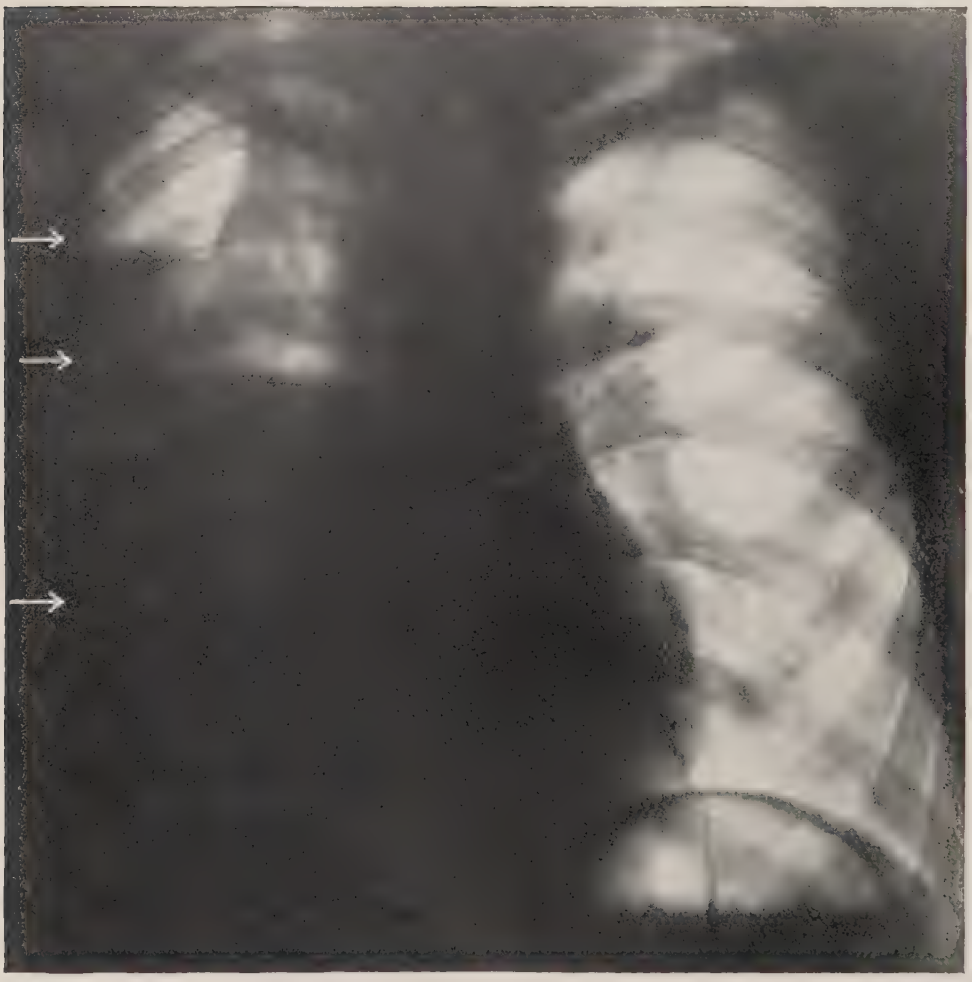


E.4(*b*).—Same patient. Lateral view shows an abnormal shadow over the lower part of the chest mainly posterior, with sharp, crescentic posterior margin abutting on the vertebral column (see arrows). Diagnosis: ? Fibroma, or benign tumour.

[*Skiagrams taken at Eccles Dispensary.*]



E.5.—R.M., male, aged 62. History: Cough and sputum for nine months. Physical signs: Generally indefinite; flattening upper parts of both lungs; no marked dullness. Sputum (muco-purulent) negative 4 times. Skiagram shows small localised pleurisy with effusion in the inner and lower part of left lung. Post-mortem revealed empyema, following pneumonia. [*Skiagram taken at Eccles Dispensary.*]



E.6.—J.B., male, aged 20. In Peel Hall Hospital 9–5–34 to 22–5–35. Had artificial pneumothorax and phrenicectomy. Skiagram taken 18–6–34 shows hydropneumothorax right lung with rather unusual condition of three fluid levels which were found at one period during stay in hospital (see arrows). Has now no cough or sputum, and is fit for work. [*Skiagram taken at Peel Hall Pulmonary Hospital.*]

the 2 c.c. mark. This is carefully injected into a tube, avoiding air bubbles, and then, when mixed, sucked up into a long, narrow pipette, graduated into 200 divisions. A reading is taken at the end of one hour at room temperature. A direct reading is taken, showing the height of the column of clear liquid. This reading can, of course, be reckoned as a percentage by dividing by two. The value of the method depends upon its being used at regular intervals in the same cases, and this is what we now do. The readings give some indication of the trend of a patient's progress ; thus, experience has shown that a low reading is found when there is only slight activity, while a high reading is associated with active disease. Blood sedimentation is one means of evaluating the condition of a patient if the question of institutional treatment is raised. It is particularly interesting in connection with patients treated at the Peel Hall Hospital. During 1934, 223 blood sedimentation tests were made at the dispensaries. Where the disease was regarded on other evidence as quiescent, the blood sedimentation range averaged 6·9 ; when there was slight, but not marked, activity, the average was 19·8 ; while the average in cases with marked activity was 72·3. Thus, these results confirm the studies at the Trudeau Sanatorium that the blood sedimentation rate under 10 by Westergren's method indicates no activity ; from 10 to 20 slight activity ; and over 20 marked activity.

PEEL HALL PULMONARY HOSPITAL, LITTLE HULTON.

Matron ... MISS E. SIMMONS.

The Hall, with about 17 acres of land attached thereto, was presented in 1914 to the Lancashire County Council by Mr. A. Wynne-Corrie, and an additional 20 acres of land, and later 8 acres, have been purchased. The adaptation of the premises as a pulmonary hospital—delayed owing to the Great War—was completed in 1921.

The hospital, accommodating 56 adult males, serves principally Dispensary Area No. 4 in taking advanced, observation and educational cases.

Mr. H. Morriston Davies is the visiting consulting chest surgeon.

A motor ambulance is provided, and is available also for conveying patients to and from other hospitals.

The average length of stay of patients at Peel Hall during 1934 was as under :—

Patients discharged	194 days
Patients who died in the hospital	116 days

Dr. Jessel reports as follows on the year's work at the hospital :—

Perhaps the outstanding features are (1) the provision of a new x-ray apparatus, with a re-arrangement of the x-ray room, and (2) the provision of a dental room and the introduction of dental treatment by a qualified dentist during the last quarter of the year. The new x-ray apparatus by Messrs. Newton and Wright is practically identical with that at our Eccles Clinic, and enables comparative pictures to be obtained. Apart from emergency measures, *e.g.*, extractions, by the provision of dental treatment in cases where the prognosis is reasonably good, patients are enabled to masticate their food properly with resulting benefit to their general health.

The work of the hospital must be considered from two aspects—medical and general.

Medical. The medical work has been continued on the lines described in previous reports. Each patient on admission undergoes a thorough investigation, but the interval between diagnosis at our Eccles Clinic and admission is usually short. After a brief period of observation, patients receive the treatment which their condition warrants, *e.g.*, in cases mainly unilateral, artificial pneumothorax is attempted, except in minimal cases or where there is some contra-indication ; in some bilateral cases sanocrysin is employed ; and cases considered suitable for phrenicectomy are operated on by Mr. Morriston Davies. In every case bed-rest is regarded as fundamental, and it cannot be too strongly emphasised that other methods of treatment should not be allowed to usurp the place of rest ; they are merely supplementary. It may, however, with confidence be stated that of all the modern methods in the treatment of pulmonary tuberculosis, artificial pneumothorax is far and away the most useful, and it is our practice to attempt this without delay. The table at the end of this chapter gives some idea of the medical work carried out during the year.

Artificial pneumothorax. The number of admissions of definite cases during the year was 110. Inductions were attempted in 43 cases—T.B. plus, 38 ; T.B. minus, 5—of which 29 were satisfactory. We regard a collapse as satisfactory where the diseased portion of lung has relaxed as the result of pneumothorax, the healthy lung remaining undisturbed as far as possible. A contra-selective collapse, *i.e.*, one where the healthy lung is collapsed with the diseased lung more or less unaffected, is to be deprecated and should be discontinued without delay.

The following table is interesting because it gives some idea of the end results of the T.B. plus patients who received artificial pneumothorax treatment during the years 1929 to 1934 inclusive :—

TABLE 20.—*T.B. plus cases which received artificial pneumothorax treatment at Peel Hall Pulmonary Hospital during the years 1929–34.*

Choice.	Unsuccessful or abandoned.				Satisfactory.			
	Number of inductions.	Deductions for cases untraced on 31/12/34.	Cases traceable on 31/12/34.	Dead.	Number of inductions.	Deductions for cases untraced on 31/12/34.	Cases traceable on 31/12/34.	Dead.
I.	13	1	12	1	27	—	27	4
II.	19	1	18	7	41	—	41	10
III.	27	—	27	14	50	—	50	14
Totals	59	2	57	22 (or 38·6%)	118	—	118	28 (or 23·7%)

NOTE.—Of the 59 unsuccessful or abandoned inductions, 45 (or 76·2 per cent.) had subsequent phrenicectomy, while of the 118 satisfactory inductions, 25 (or 21·1 per cent.) had subsequent phrenicectomy. Thus, even with the addition of phrenicectomy in the great majority of the cases, the patients whose inductions were unsuccessful or abandoned show a higher percentage of deaths than the patients whose pneumothorax was satisfactory with a much lower percentage of phrenicectomies as an additional measure.

The cases are grouped under choices as it would obviously be unfair to compare dissimilar types of cases. At the end of the year, 76·3 per cent. of the satisfactory cases and 61·4 per cent. of the unsuccessful cases were still alive. As 45, or roughly three-quarters, of the latter had subsequent phrenicectomy, compared with 25, or one-fifth, of the 118 satisfactory inductions, it is clear that phrenicectomy with no pneumothorax is a less satisfactory mode of treatment than pneumothorax without phrenicectomy.

Phrenicectomy. During the year, Mr. Morriston Davies paid eight visits to the hospital and performed 33 phrenicectomies and one division of adhesions. The accompanying table shows the phrenicectomies he has done during the last four years and the reasons for this treatment. At the end of the year, 85·6 per cent. of the cases were still alive. We regard phrenicectomy as a useful ancillary measure particularly where artificial pneumothorax cannot be attempted and in basal lesions.

TABLE 21.—*Phrenicectomies performed by Mr. Morriston Davies at the Peel Hall Pulmonary Hospital during 1931–34.*

Year.	Number of patients on whom the operation of phrenicectomy was performed.						Number of such patients who were alive on 31/12/34.					
	Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.		Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.	
	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.
1931	9	2	2	1	11	3	9	2	2	1	11	3
*1932	15	7	3	1	18	8	11	4	1	1	12	5
1933	12	2	3	–	15	2	8	2	3	–	11	2
1934	9	5	16	3	25	8	9	5	16	3	25	8
Total	45	16	24	5	69	21	37	13	22	5	59	18
	61		29		90		50		27		77	

Altogether there have been 13 deaths, equal to 14·4 per cent. of the total cases treated. Thus, 85·6 per cent. of the cases are still living.

* Excludes 1 case which had removed and could not be traced.

Sanocrysin. This drug gives uncertain results, but if the cases are carefully selected and have some obvious degree of resistance even bilateral cases will often show some improvement. It is also sometimes useful when there is a spread to the contra-lateral lung in artificial pneumothorax cases. After a course of treatment there is usually a reduction in the blood sedimentation rate, but the disappearance of bacilli from the sputum is not so frequent as in the case of artificial pneumothorax. Eighteen cases received this treatment during the year, and altogether, during the six years, 1929–34, 73 patients have received sanocrysin at Peel Hall, of whom 36, or about one-half, were alive at the end of 1934.

General. A necessary accompaniment of what may be regarded as strictly medical treatment must be the continuance of efforts to maintain the patients' morale. To this end the amenities of the hospital have been steadily improved year by year. The wards are bright, airy, and pleasant, and the extensive gardens and grounds provide pleasant surroundings for the patients, as well as opportunities for healthy, useful exercise. There is a Kodascope, library, radio in each ward, and ample facilities for suitable recreation, both indoor and outdoor. In short, everything possible is done to keep the patients contented and hopeful, and the fact that irregular discharges are so rare must, I think, be ascribed to the happy, homelike atmosphere. The patients' social club has continued to exercise a valuable influence in this direction, and adequate provision is made for the religious needs of the patients.

As a satisfactory hospital cannot exist without good nursing, it has been our practice for some time to hold regular classes of instruction for the nursing staff. During the year, three of our nurses obtained the certificate of the Tuberculosis Association.

Details of work carried out at Peel Hall during 1934 :—

X-ray work—	
Skiagrams	600
Screenings	943
Artificial pneumothorax—	
Inductions	43
Refills...	770
Phrenicectomies (by Mr. Morriston Davies)	33
Division of adhesions (by Mr. Morriston Davies) ...	1
Sanocrysin injections	139
Blood sedimentation tests	212
Mantoux tests	4
Lipiodol	3
Gas replacements	47
Sputum examinations (positive, 275 ; negative, 397)...	672

Numbers of patients in Peel Hall on the 31st December, 1934, who were having special treatment :—

Artificial pneumothorax	9
Sanocrysin	12
Phrenicectomy (or recovering from the operation) ...	3
Artificial pneumothorax and sanocrysin	1
Artificial pneumothorax and phrenicectomy	7

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 1,549 ; doubtful, 0.)	1,549

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of " *old* " *cases* and " *old* " *contacts*.
Patients' homes	166	949
Leigh Chief Dispensary	214	1,032
Eccles Branch Dispensary	255	2,205
Farnworth Branch Dispensary	101	534
Pendlebury Branch Dispensary	48	411
Stretford Branch Dispensary	152	570
	770	4,752

Attendances of patients at the Eccles Dispensary for artificial light treatment (96 individual patients)	4,980
Attendances for artificial pneumothorax treatment (53 individual patients)	669
Care committee meetings attended by—	
(*a*) Tuberculosis officers	33
(*b*) Tuberculosis health visitors	52
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals	73
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)	27

Visits by dispensary nurses to patients' homes—		
Routine visits	8,743	9,519
Application of surgical dressings	158	
Adjustment of splints and surgical appliances	257	
Other actual nursing	361	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings	301	327
Adjustment of splints and surgical appliances	26	
Sanitary defects reported to the local medical officers of health		26
Sanitary defects which after notification were remedied		17
Disinfections carried out by local sanitary authorities		548
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		89·7%
Sputum examinations—		
Total number of specimens examined		2,094
Number where tubercle bacilli were found		417
Number of specimens sent by medical practitioners		246
Number of these where tubercle bacilli were found		27
Blood sedimentation tests		223
Mantoux tests		75
Care work—		
Number of patients assisted by care committees and tuberculosis sections of civic guilds of help		189
Amount expended		£333/7/3
Number of patients assisted from County care fund		45
Amount expended		£102/11/9
Contacts—		
Number of selected persons examined		147
Number of cases of tuberculosis found		9
X-ray work—		
Skiagrams—pulmonary 1,207, non-pulmonary 87*		1,294
Screenings		728

* Spine 44, hip 10, knee 17, ankle 7, wrist 3, shoulder 3, pelvis 2, hand 1.

XVI.—DISPENSARY AREA No. 5
(including Rufford Pulmonary Hospital).

Area (estimated population 263,686) embraces West Lancashire Rural, Great Crosby, Waterloo-with-Seaforth, Litherland, Newton-in-Makerfield, Whiston Rural, Warrington Rural, and Widnes districts.

Consultant Tuberculosis Officer ... Dr. C. W. Laird.
(Dr. Laird is also visiting medical superintendent of the Rufford Pulmonary Hospital).

Assistant Tuberculosis Officers ... Dr. C. H. Lilley and
Dr. W. Fettes (2 days per week).

Dr. Laird reports :—

It will be noticed from the statistical tables relating to the subject that the work of the area during 1934 has proceeded on very much the same lines as in previous years. The total number of cases under supervision at the end of the year was practically the same as in 1933, and amounted to 1,052, of which 644 were pulmonary.

It is gratifying to record some diminution in the number of new cases as compared with the previous year. The number of re-attendances and re-examinations is, at the same time, very little below last year. The number of visits by dispensary nurses to patients' homes has materially increased, and the number of individual patients in receipt of artificial pneumothorax treatment has increased by over 26 per cent. In seeking the explanation of alteration in figures one has to proceed guardedly, as many factors contribute to this alteration, and it would be perhaps injudicious to draw conclusions from the figures of any two successive years. However, the medical and nursing services have been maintained satisfactorily despite some unfavourable circumstances arising through indisposition on the part of the staff, and the same circumstances will doubtless, to some extent, affect the figures for 1935 when these are available.

At Seaforth the number of sputum examinations made was 880, and of these 211 proved positive. As regards x-ray work, 779 skiagrams were taken and 487 screen examinations were carried out. Pneumothorax refills totalled 384, the number of individual patients being 58.

Artificial light treatment continues to be given at St. Helens Dispensary, but the total number of patients undergoing this form of therapy is gradually lessening.

The dispensary at Widnes is unfortunately still unsatisfactory, and it has been disappointing from year to year to find that schemes for replacing it have not materialised. The work has to be carried on under unfavourable conditions, but one still cherishes the hope that before very long a real improvement in these conditions will be achieved by means of new premises.

The four care committees which were formed in the area many years ago still carry out their useful and self-sacrificing work. One recognises with thankfulness the devotion of their members who give their time and personal service to this work without remuneration of any kind other than that satisfaction resulting from good work which brings its own reward. Such committees function at Prescot, Huyton, Earlestown, and Widnes. The response to appeals on their behalf by members of the public and by large employers as well as by the Churches, is frequently wonderful, and it is often in the poorer districts that the greatest support is freely given. These committees serve a useful purpose in providing clothing, groceries, etc., for patients or their dependants, whose resources may not enable them to carry on satisfactorily during a period of institutional treatment. The County authorities are sensible and appreciative of their willing help and contribute towards their funds at a rate proportional to the amount of their annual expenditure.

The co-operation of practitioners in the various districts has been quite satisfactory. The same may be said of the submission of patients to dispensary supervision and special forms of treatment; this, on the whole, has been very good and is evidence of a desire on the part of the individual not only to do the best for himself, but to assist as far as he can in the preventive work which is so closely related to the remedial in the treatment of pulmonary tuberculosis.

RUFFORD PULMONARY HOSPITAL, NEAR ORMSKIRK.

Matron ... MISS S. HOLMES.

The County Council acquired, on the 18th October, 1920, Rufford New Hall, situated on the west side of the main road from Preston to Ormskirk, together with 128 acres of land adjoining the Hall. Under pressure from the Ministry of Health, a scheme was prepared for using the Hall and land for discharged sailors and soldiers, which included training the patients in several occupations. Some additional land was also obtained with a view to training in agricultural work, but all this, however, was abandoned in 1921 by order of the Ministry of

Health, owing to financial stringency. The premises, first used as a pulmonary hospital on the 7th April, 1926, provide accommodation for 52 female patients.

The hospital serves as far as possible the districts in west Lancashire, so that relatives and friends will have reasonable facilities for visiting.

A motor ambulance has been provided, available for the hospital and also for conveying County patients to or from other hospitals.

The average length of stay of patients at Rufford during 1934 was as under :—

Patients discharged	136 days.
Patients who died in the hospital	75 days.
Observation case discharged	35 days.

Dr. Laird reports as follows :—

During 1934 the number of patients admitted was 127 ; discharges numbered 106 and deaths 20. In addition, one case sent in for observation and diagnosis was discharged. Treatment was carried out on much the same plan as in 1933. For the more advanced case one had to be satisfied with rest and general hygienic measures, supplemented by the medicinal relief of symptoms. For such patients a stay in hospital—often of a prolonged character—is justified from the standpoint of isolation and prevention of further infection ; also, in many instances, by the provision of constant skilled care and nursing which could not adequately be obtained at home.

The moderately advanced or earlier cases were frequently found suitable for special kinds of therapy, *e.g.*, by gold salts or artificial pneumothorax, or a combination of both. As many as 25 to 30 per cent. of the total number of patients have at times been in receipt of therapeutic collapse, whilst about 50 per cent. in all are usually undergoing special treatment in one form or another.

Throughout the year some 26 patients had artificial pneumothorax, and 22 had aurotherapy ; 12 of the former and 12 of the latter were still in hospital at the end of the year. In one case both forms of treatment were in use. Another patient was having simultaneous bilateral pneumothorax and had previously had a phrenicectomy. A patient admitted for observation had lipiodol injected by the cricothyroid route for diagnostic purposes, and was not regarded as suffering from tuberculosis.

The following shows at a glance the amount of special work undertaken at the hospital during the year :—

Artificial pneumothorax—		
Attempted		33
Abandoned		8
Satisfactory or partially satisfactory		26
Refills		331
Gas replacements		3
Gold salts (injections)—		
Sanocrysin		268
Crisalbine		34
Solganol		19
Artificial light (pulmonary case with lupus of wrist)		1
Dental extractions		43
Aspiration of effusion		7
Aspiration of air		3
Mantoux test		1
Lipiodol		1
Blood sedimentation tests		150
X-ray examinations—		
Screenings	808	
Skiagrams	223	
		1,031
Sputum examinations—		
Positive	400—71%	
Negative	164—29%	
		564

In 1933 the total sputum examinations were 493—79 per cent. positive and 21 per cent. negative. Possibly the greater use of gold salts had some bearing on the larger proportion of negative results in 1934.

The numbers of patients in Rufford on the 31st December, 1934, who were receiving special treatment were as follow :—

Artificial pneumothorax	12
Artificial pneumothorax and sanocrysin	1
Sanocrysin	10
Crisalbine	1
Solganol	1
Artificial light (lupus)	1

The fitting of removable lath blinds to the glass roof of the verandah added materially to the comfort of patients during the periods of bright and sultry weather, and the installation of a lift has proved a very great convenience for the transport of patients between the ground floor and the upper portion of the building, enabling greater use to be made of x-ray examination in the case of those who are very poorly, as well as proving helpful in other ways.

Recreation was provided as in other years by means of whist drives, cinema shows and various forms of entertainment. Occupational therapy is of the lightest and only applicable to a very few. For many, the library and the wireless programmes relieve the monotony which is apt to accompany long and enforced immobilisation in bed.

Grateful acknowledgment is made for the grants kindly given by the County Council towards various amenities such as the provision of books for the staff and patients' libraries, the hire of cinema films and the supply of periodicals ; also for extra fare at Christmas time.

The interest of the village choir at Christmas time was appreciated when they visited the hospital and cheered the patients with carol singing.

The spiritual welfare of the patients has not been overlooked, and visits were made to the hospital periodically by clergy of the various denominations. Such visits are welcomed, and often produce a more settled state of mind in patients whose progress is retarded by anxiety.

One visit was made by a County Councillor during the year.

Reference must be made to the thoughtfulness of various benefactors and donors, who by personal service and the giving of concerts and books, etc., have helped to brighten the lives of their less fortunate fellow creatures.

A change of matronship was effected on August 7th when Miss Jones, who had held the post up to that date, was appointed matron of the Elswick Sanatorium. She has been succeeded by Miss Holmes, who was previously matron at Wolstenholme Pulmonary Hospital. I have, therefore, to express my thanks to both of these ladies for the able assistance which they have given in the management of the hospital, and to them and the rest of the staff also, for contributing individually and collectively towards its smooth running.

SUMMARY OF DISPENSARY WORK.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 1,052 ; doubtful, 4.) 1,056

Examinations by tuberculosis officer at—	**Examinations of *new persons* and *new contacts* for diagnosis.**	**Re-visits or re-attendances of " *old* " *cases* and "*old*" *contacts*.**
Patients' homes	**135**	**496**
Seaforth Chief Dispensary	**303**	**1,353**
St. Helens Branch Dispensary	**120**	**618**
Widnes Branch Dispensary	**123**	**892**
	546	**2,863**

Attendances of patients at the St. Helens Dispensary for artificial light treatment (71 individual patients)		2,460
Attendances for artificial pneumothorax treatment (58 individual patients)		384
Care committee meetings attended by—		
(*a*) Tuberculosis officers		5
(*b*) Tuberculosis health visitors		30
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals		60
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)		15
Visits by dispensary nurses to patients' homes—		
Routine visits	4,311	4,834
Application of surgical dressings	388	
Adjustment of splints and surgical appliances	106	
Other actual nursing	29	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings	771	846
Adjustment of splints and surgical appliances	75	
Sanitary defects reported to the local medical officers of health		86
Sanitary defects which after notification were remedied		57
Disinfections carried out by local sanitary authorities		305
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutary notification		87·2%

XVII.—HIGH CARLEY SANATORIUM, OUBAS HOUSE CHILDREN'S SANATORIUM, AND FURNESS DISPENSARY AREA.

Medical Superintendent ... ... DR. GEORGE LEGGAT.

(Dr. Leggat is also visiting medical superintendent of Oubas House Children's Sanatorium, Ulverston, and consultant tuberculosis officer for the Furness Dispensary Area—*i.e.*, the area around the sanatorium—containing a population of 38,174).

Visiting Consulting Chest Surgeon ... MR. H. MORRISTON DAVIES.

Visiting Anæsthetist ... ... DR. J. HALTON.

Assistant Medical Superintendent ... DR. J. N. WHYTE (from 3-12-34).

Matron ... ... MISS E. WOOSEY.

(The matron is also responsible for the Oubas House Children's Sanatorium Ulverston).

HIGH CARLEY SANATORIUM, NEAR ULVERSTON.

High Carley Sanatorium is situated about three miles west of Ulverston, to the south of the main road to Barrow-in-Furness. The buildings stand in 23 acres of ground, and accommodation is provided for 118 patients (60 males and 58 females) in 37 double cubicles, 4 single cubicles, 5 six-bed wards, and 5 double sleeping shelters.

The medical superintendent and the assistant are accommodated on the estate; and seven houses are provided in the vicinity of the sanatorium for the male employees.

Since 1929, electricity has been obtained from the public supply in replacement of the sanatorium plant.

A treatment block was built in December, 1932, and contains on the ground floor an operating theatre, waiting and anæsthetic room, sterilising room, recovery room, artificial light room with a room adjoining for the sister, laboratory, x-ray room and dark room; on the first floor five bedrooms and a sick room are provided for the staff.

During the year, 171 County patients received from the visiting dental surgeon, Mr. A. Miller, some form of dental treatment, particulars of which will be found in Chapter XXIII.

The average length of stay of patients at High Carley during 1934 was as under :—

Patients discharged	288 days.
Patients who died in the sanatorium	153 days.
Observation cases	61 days.

Dr. Leggat reports as follows on matters relating to the treatment of the patients and the administration of the sanatorium :—

A new dressing room with locker accommodation was added on the female side. The extension includes a large drying room and a small room fitted with a sink (where the patients can do their small washing). An extension to supply a similar dressing room and a drying room on the male side is now in process of construction.

The County Tuberculosis Committee held a monthly meeting at the sanatorium in September, and afterwards made a tour of inspection of the sanatorium and the new treatment block.

Artificial pneumothorax treatment. There were 27 patients continuing this form of treatment from the previous year ; during 1934, there were 55 successful inductions and 13 failures, 46·2 per cent. of the former developing fluid varying from a puddle upwards. Of the 82 cases in which a successful induction had been obtained, 3 patients left for other than medical reasons and treatment was abandoned in 15 cases for the following reasons :—Fluid, 7 ; obliterative pleurisy, 1 ; bronchitis, 1 ; unsatisfactory results, 5 ; died, 1.

Twenty-eight patients completed the treatment and 36 were continuing at the end of the year. Of the 28 cases completing treatment, 23 had positive sputum on commencement ; 17 of these lost their tubercle bacilli, giving a bacillary loss of 73·9 per cent. Fifteen of the above 28 cases had no ancillary treatment ; 12 of these 15 cases had positive sputum on commencement which in eight instances became negative, equal to bacillary loss of 66·7 per cent.

The number of refills for the sanatorium patients alone was 1,444.

Thoracoplasty. The operation of thoracoplasty was performed on two occasions by Mr. Morriston Davies for a case of chronic empyema with a discharging sinus. The end result was most satisfactory, for, from being bed-ridden with a hopeless prognosis, this patient's sinus is now completely closed, she is on full exercise and work, has gained 17 lbs. in weight, and is without cough or sputum.

One of the most striking features about this operation is the very slight deformity caused, even when the operation has been a complete one.

Phrenicectomy. During the year, 32 cases received this form of treatment. Before the operation, 19 patients had positive sputum, which in five instances subsequently became negative or nil giving a bacillary loss of 26·3 per cent.

Twenty-eight of the 32 patients had sputum before the operation ; subsequently the sputum cleared up in eight cases, was less in amount in seven cases, remained stationary in ten, and increased in three.

As a result of the phrenicectomy there was a marked rise of the dome of the diaphragm in 17 cases, or 53·1 per cent., and a slight rise in 15, or 46·8 per cent.

Twenty-one patients had cavitation ; the cavity was obliterated in 6 cases, controlled but not obliterated in 12, and remained stationary in 3.

Four of the patients complained of a drag on the diaphragm, but this was relieved as a result of the operation.

The following Table 22 shows the number of phrenicectomies performed by Mr. Morriston Davies at the High Carley Sanatorium during 1933–34 :—

Year.	Number of patients on whom the operation of phrenicectomy was performed.						Number of such patients who were alive on 31/12/34.					
	Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.		Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.	
	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.
*1933	19	2	7	1	26	3	17	2	6	1	23	3
†1934	22	2	7	–	29	2	22	2	7	–	29	2
Total	41	4	14	1	55	5	39	4	13	1	52	5
	45		15		60		43		14		57	

* Excludes 2 removals to other areas.
† ,, 1 ,, ,, ,,

Artificial light therapy. This form of treatment has been continued during the year, except the summer months. I still think that, with careful supervision and care in the selection of the cases, it is a useful adjunct in the routine sanatorium treatment.

Gold therapy. The only change in the intravenous administration of the gold salts has been the use of 10 per cent. calcium gluconate, which is used as a solvent for the salts in place of, and to the same extent as, distilled water. The gluconate is only used in cases showing a tendency to reaction, and I think that its use has definitely diminished the complications and allowed treatment to be given where it would otherwise have had to be discontinued.

Sanocrysin. A total of 55 patients received this form of treatment during 1934, 11 continuing from the previous year and 44 commencing during 1934. Treatment was abandoned in 16 cases for the following reasons :—Left before treatment completed, 4 ; discontinued at patient's request, 1 ; dermatitis and enteritis, 1 ; albuminuria, 1 ; diarrhœa and headache, 1 ; ulcerated mouth, 1 ; erythema, 1 ; pyrexia, 1 ; dermatitis and slight ulceration of mouth, 1 ; dermatitis, 3 ; difficulty with injections, 1.

Of the remaining 39 cases, 25 completed a course of three or more grams, and 14 were still undergoing treatment at the end of the year.

At the commencement of the treatment, 22 of the 25 patients who received three or more grams of sanocrysin had positive sputum ; on the completion of the course, 5 had lost their tubercle bacilli, giving a bacillary loss of 22·7 per cent.

Seventeen cases did not receive any ancillary treatment ; on commencement of the course, 14 of these had positive sputum which in two instances became negative, representing a bacillary loss of 14·2 per cent.

The x-ray appearances showed improvement in 76·0 per cent. of the cases, and the sedimentation rate in 95·4 per cent. ; reduction in the amount of sputum was found in 36·6 per cent., and gain in weight in 64·0 per cent.

The number of injections during the year was 597.

The following Table 23 shows the position at the end of March, 1935, of 31 patients who received three or more grams of sanocrysin during 1933 :—

Classification.	Number of patients who received treatment.	Nett number after deducting removals, etc.	Position at the end of March, 1935.			
			Alive.		Dead.	
			Fit for work.	Unfit for work.	Number.	%
T.B. plus . .	24	21	10	10	1	4·7
T.B. minus . .	7	7	4	2	1	14·2
Total	31	28	14	12	2	7·1

Of the cases still residing in the County, the bacillary loss at the end of treatment was 57·1 per cent.; the present bacillary loss is 45·0 per cent.

Radiological improvement has been maintained in 66·7 per cent. of the cases recently x-rayed. In one case, in which the improvement was not maintained, the patient had extensive cavitation in both upper zones; gold treatment is not now given in this type of case.

Crisalbine. Thirty-six patients received this form of treatment during the year, 9 continuing from the previous year and 27 commencing during 1934.

Treatment was abandoned in 9 cases for the following reasons :—Ulcerated mouth and dermatitis, 1; dermatitis and dyspnœa, 1; diarrhœa, ulcerated mouth and vomiting, 1; diarrhœa, 1; diarrhœa, vomiting and abdominal pain, 1; pyrexia, 1; albuminuria, 1; left to resume work, 2.

Of the remaining 27 cases, 20 completed a course of three or more grams and 7 were still undergoing treatment at the end of the year.

At the commencement of the treatment, 18 patients who received three or more grams had positive sputum, but on completion of the treatment 8 had lost their tubercle bacilli, giving a loss of 44·4 per cent.

Nine of the above 18 cases did not receive any ancillary treatment. Seven of these had positive sputum on commencement, 3 becoming negative, giving a bacillary loss of 42·8 per cent.

The x-ray appearances showed improvement in 80·0 per cent. of the cases, and the sedimentation rate in 85·0 per cent.; there was a reduction in the amount of sputum in 38·8 per cent., and a gain of weight in 90·0 per cent.

The number of injections during the year was 397.

The following Table 24 shows the position at the end of March, 1935, of 20 patients who received three or more grams of crisalbine during the years 1932 and 1933 :—

Classification.	Number of patients who received treatment.	Nett number after deducting removals, etc.	Position at the end of March, 1935.		
			Fit for work.	Unfit for work.	Dead.
T.B. plus . .	15	13	9	4	—
T.B. minus . .	5	4	2	2	—
Total . .	20	17	11	6	—

The bacillary loss on completion of treatment of the patients still residing in the County was 69·2 per cent.; the present bacillary loss is 53·8 per cent.

Radiological improvement has been maintained in 81·8 per cent. of the cases recently x-rayed. One case had a spread to the contralateral lung twelve months after treatment, but this cleared up after a further course of gold.

The following is a summary of the work done during the year 1934:—

Artificial pneumothorax—	
Attempted	68
Abandoned	23
Satisfactory	45
Phrenicectomy	32
Division of adhesions	1
Thoracoplasty	2
Sanocrysin	44
Crisalbine	27
Artificial light treatment (local 33, general 30)	63
Lipiodol injections	15
Gas replacements	5
Gas replacements with oleothorax	30
Gas withdrawals	15
Sinus lavages	136
Sinuses opened and drained	1
Withdrawal of fluid	10
Withdrawal of fluid and gas	1
Exploration of chest	18
Dental extractions under general anæsthetic	6
Excisions	2
Incisions	11
Aspirations	16
Wounds stitched	3
Throat examinations	5
Foreign body removed	1
Blood sedimentation tests	415
Ear examinations	2

The numbers of patients in High Carley on the 31st December, 1934, who were receiving special treatment were as follow:—

Artificial pneumothorax	22
Artificial pneumothorax and sanocrysin	5
Artificial pneumothorax and crisalbine	3
Artificial pneumothorax and phrenicectomy	1
Artificial pneumothorax and artificial sunlight	4
Artificial pneumothorax, sanocrysin, and phrenicectomy	1
Phrenicectomy	4
Sanocrysin	8
Crisalbine	4
Artificial light (local 2, general 7)	9

Bacillary loss. During the year, 77 patients who had positive sputum on admission were discharged. The sputum on discharge in 40 of these cases had become negative, giving a bacillary loss of 51·9 per cent. A careful record of the bacillary loss has been kept for a number of years and the average loss for the last ten years is 28·4 per cent.

Sputum examinations. The sputum of patients is examined as follows :—Observation cases, weekly ; T.B. minus cases, fortnightly ; T.B. plus cases, monthly. During the year, 1,326 specimens of sputum were examined, of which 677 were positive.

Patients' weights. Patients' weights are taken at weekly intervals ; the average gain in weight of those who completed two or more months' treatment was :—65 male patients, 12·27 lbs. ; 56 female patients, 13·64 lbs.

X-ray examinations. The number of skiagrams taken during the year was 1,106, as compared with 1,046 for the previous year ; screen examinations numbered 1,699 as compared with 1,535 for the previous year.

Nurses' examinations. Probationer nurses are prepared for the examination held under the auspices of the Tuberculosis Association. During the year, four nurses sat for Part I and one sat for Part II. Two nurses were successful in passing Part I.

Occupational therapy. As in former years, the forms of occupational therapy were joinery, carpentry, wattle-hurdle making, gardening, boot repairing, poultry keeping, and cane chair mending. In the joinery department all minor repairs in connection with the institution have been carried out. Two poultry houses, and a shed for storing anthracite coal have been built, and 50 wattle-hurdles made and despatched to various County sanatoria. In the boot repairing department, 39 pairs of boots or shoes have been repaired.

Social activities. The usual outdoor games were provided during the summer months—bowls and clock golf for the men, and croquet for the women. Whist drives were held at frequent intervals ; during the winter months, the cinema entertainments were continued, and several concerts and plays were given by friends from Dalton-in-Furness and Barrow-in-Furness. On two occasions sketches were given by the patients themselves, and great credit is due to them for the excellent performances.

Library. The sanatorium possesses an excellent library, which is kept up-to-date by periodical supplies of books and magazines from the British Red Cross Society and by grants from the Tuberculosis Committee. In addition, a good supply of periodicals and current literature is received from friends interested in the institution.

Church services. Church of England. Canon Kenworthy holds a service and visits each patient every Thursday, and holds a celebration of the Holy Communion on the last Monday in each month.

Nonconformist. The Nonconformist minister, selected in turn from a panel of clergy, conducts a service on alternate Sunday afternoons.

Roman Catholic. Father Morrisey, from Ulverston, hears confessions in the evening of every seventh week, and the following morning administers Holy Communion.

Visits by County Councillors. Three special visits were paid by County Councillors during the year.

The year has been somewhat interrupted by changes in the medical staff, but I should like to thank the various medical officers who assisted me throughout the year, the matron, Miss Woosey, and the nursing and clerical staffs, who have given me loyal support.

The following Table 25 shows the condition of patients discharged from the High Carley Sanatorium during the year 1934 :—

Classification on admission to the sanatorium.	Condition at time of discharge.	Duration of residential treatment in the sanatorium.					Total.	
		Under 28 days.	1—3 months.	3—6 months.	6—12 months.	More than 12 months.	No.	%
T.B. minus.	Quiescent	1	2	7	12	2	24	70·6
	Improved	—	3	2	2	—	7	20·6
	No material improvement	1	1	—	1	—	3	8·8
	Died in sanatorium ...	—	—	—	—	—	—	—
T.B. plus 1.	Quiescent	—	—	1	5	12	18	62·1
	Improved	—	—	5	1	2	8	27·6
	No material improvement	—	1	—	—	1	2	6·9
	Died in sanatorium ...	1	—	—	—	—	1	3·4
T.B. plus 2.	Quiescent	—	—	3	8	18	29	38·7
	Improved	1	2	8	10	14	35	46·7
	No material improvement	1	1	2	3	—	7	9·3
	Died in sanatorium ...	—	1	2	—	1	4	5·3
T.B. plus 3.	Quiescent	—	—	—	—	—	—	—
	Improved	—	1	—	—	—	1	33·3
	No material improvement	—	—	—	—	—	—	—
	Died in sanatorium ...	1	1	—	—	—	2	66·7
Diagnosis on discharge from observation.					Stay under 4 weeks	Stay over 4 weeks.		
Tuberculous					—	4	4	18·2
Non-tuberculous					3	13	16	72·7
Doubtful					—	2	2	9·1

Total ... 163

OUBAS HOUSE CHILDREN'S SANATORIUM, ULVERSTON.

The medical superintendent, assistant medical superintendent, and matron of the High Carley Sanatorium are also responsible for the work at Oubas House. The sister-in-charge is Miss D. Pope, and the certificated school teacher is Miss A. Gibson.

The house, the property of the County Council, stands in its own grounds (about one acre in extent), and accommodates 21 girls. Educational instruction is given to the children in conformity with the requirements of the Board of Education.

During the year, 18 patients received from the visiting dental surgeon, Mr. A. Miller, some form of dental treatment particulars of which are given in Chapter XXIII.

The average length of stay of patients at Oubas House during 1934 was as under :—

Patients discharged	240 days.
Observation cases	167 days.

Dr. Leggat reports as follows :—

During the year, 18 patients were admitted and 13 discharged. The condition on discharge of the 13 cases was as follows :—Disease quiescent 9, improved 1, no material improvement 3. In addition, 6 observation cases were admitted, and 9 discharged (4 tuberculous, 5 non-tuberculous).

As in previous years, natural sunlight treatment was given at every opportunity and meals were taken out of doors. On a number of occasions the children were conveyed to Bardsea by bus for the purpose of undergoing natural sunlight treatment.

The Mantoux tuberculin test was carried out in 18 cases with the following results :—

Number of positive reactions after 0·1 c.c. of 1/10,000	2
Number of positive reactions after 0·1 c.c. of 1/1,000	6
Number of positive reactions after 0·1 c.c. of 1/100	1
Number of negative reactions	9

There were 27 specimens of sputum examined during the year, all the results being negative.

Cases with positive sputum or those requiring specialised treatment are transferred to High Carley Sanatorium. During the year, four such cases were transferred ; two of these received artificial pneumothorax treatment, one had a phrenicectomy performed combined with a course of gold treatment, and the other remained on ordinary sanatorium treatment.

The average gain in weight of the patients discharged from Oubas House during 1934 was 12 lbs. 2 ozs.

Unfortunately, at the end of the year, we had an outbreak of scarlet fever, which necessitated the removal of 13 children to the Ulverston Joint Hospital Board's Isolation Hospital. All the children made a very good recovery and it was interesting to note that there was no renewed activity of the tuberculous condition as a result of the scarlet fever. We are much indebted to Dr. Patterson and the hospital authorities for taking charge of the cases for us, and for the excellent results achieved.

Our thanks are due to the various surrounding parishes for gifts of fruit and vegetables from their Harvest Festivals.

It is interesting to note that, as an appreciation of the treatment they received, two former patients (one discharged three years ago) send picture books and sweets at regular intervals for the children.

Lady Fell has visited most regularly whenever possible, and Mrs. Case has brought gifts for the children on several occasions ; we are much indebted to them for their continued interest in the children.

The work of the school has been continued on similar lines to those of previous years. Sir Thomas Tomlinson attended periodically during the year to mark the school register.

I should like to thank Sister Pope for the great help she has given me, and the personal care and interest she has taken in the welfare of the children in her charge.

Furness Dispensary Area.

Area (estimated population 38,174) embraces Dalton-in-Furness, Grange-over-Sands, Ulverston, and Ulverston Rural districts.

Dr. Leggat sends the following report :—

During the year, 92 per cent. of the new cases (excluding contacts) examined were sent to me for an opinion before being notified ; the nine cases notified were all suffering from non-pulmonary tuberculosis. This shows the very satisfactory working of the tuberculosis scheme and the close co-operation between the practitioners and the tuberculosis officer. I am extremely grateful to the general practitioners in my area for their help.

The number of new cases and new contacts examined during the year was 143 ; of these, 47 were diagnosed as tuberculous, 94 as non-tuberculous, and, at the end of the year, two cases still remained doubtful.

During the year, 231 skiagrams were taken and 20 screen examinations were made at High Carley in regard to dispensary patients.

The examination of sputum, as in previous years, was carried out at High Carley ; 88 specimens were examined, 19 of which were positive for tubercle bacilli, and 69 negative.

Artificial light treatment at the Ulverston Dispensary on two afternoons per week was continued on the lines of previous years.

In February, 1934, we were most fortunate in having with us for a week, Dr. Harley Williams, Medical Commissioner of the National Association for the Prevention of Tuberculosis, who gave a series of most interesting and instructive lectures and demonstrations to adults and school children. The lectures were much appreciated and well attended, the total attendances numbering 2,160. We are much indebted to Dr. Harley Williams, and it is felt that the time he spent in this area has done a great deal of good in stimulating wider interest in the prevention and cure of tuberculosis and, in addition, in helping to dispel the undue fear in regard to this disease.

I should like to thank Nurse Duston for the help she has given me in this area. She has very long distances to travel, and gets through a great amount of work as is shown by the number of visits recorded.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 252 ; doubtful, 2)		254

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of " *old* " *cases* and " *old* " *contacts*.
Patients' homes	34	68
Ulverston Dispensary	109	353

Attendances of patients at the Ulverston Dispensary for artificial light treatment (33 individual patients)		1,103
Attendances for artificial pneumothorax treatment (4 individual patients)		33
Visits by tuberculosis officer to sanatoria, and pulmonary and special hospitals		10
Special visits by tuberculosis officer (*i.e.*, interviews with medical officers of health, general hospital officials, etc.)		1
Visits by dispensary nurse to patients' homes—		
Routine visits	1,776	1,910
Actual nursing	134	
Disinfections carried out by local sanitary authorities		52
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		92·2%

XVIII.—ELSWICK SANATORIUM AND FYLDE DISPENSARY AREA.

Medical Superintendent ... ... DR. G. BARKER CHARNOCK.

(Dr. Charnock is also consultant tuberculosis officer for the Fylde Dispensary Area—*i.e.*, the area around the sanatorium—containing a population of 85,967).

Visiting Consulting Chest Surgeon ... MR. H. MORRISTON DAVIES.

Assistant Tuberculosis Officer ... DR. W. FETTES (1½ days per week).

Matron ... ... MISS A. JONES.

ELSWICK SANATORIUM, NEAR KIRKHAM.

This sanatorium is situated on the east side of Elswick village, and is about six miles from Kirkham station. The buildings and about 11 acres of land belong to the Fylde, Preston, and Garstang Joint Smallpox Hospital Board, and are held on lease by the County Council until 1955. The Council are under an obligation to vacate the premises in case of a severe epidemic of smallpox. Accommodation is provided for 38 males and 32 females; total 70 pulmonary cases.

An x-ray apparatus is provided in a separate building erected in 1925.

A treatment block, built as an extension to the x-ray room, was completed in May, 1933, and consists of operating theatre, sterilising room, consulting room, dressing rooms, and lavatory. This block also serves as a dispensary for out-patients from the southern part of the dispensary area and saves their attendance at the Fleetwood Dispensary.

The average length of stay of patients at Elswick during 1934 was as under :—

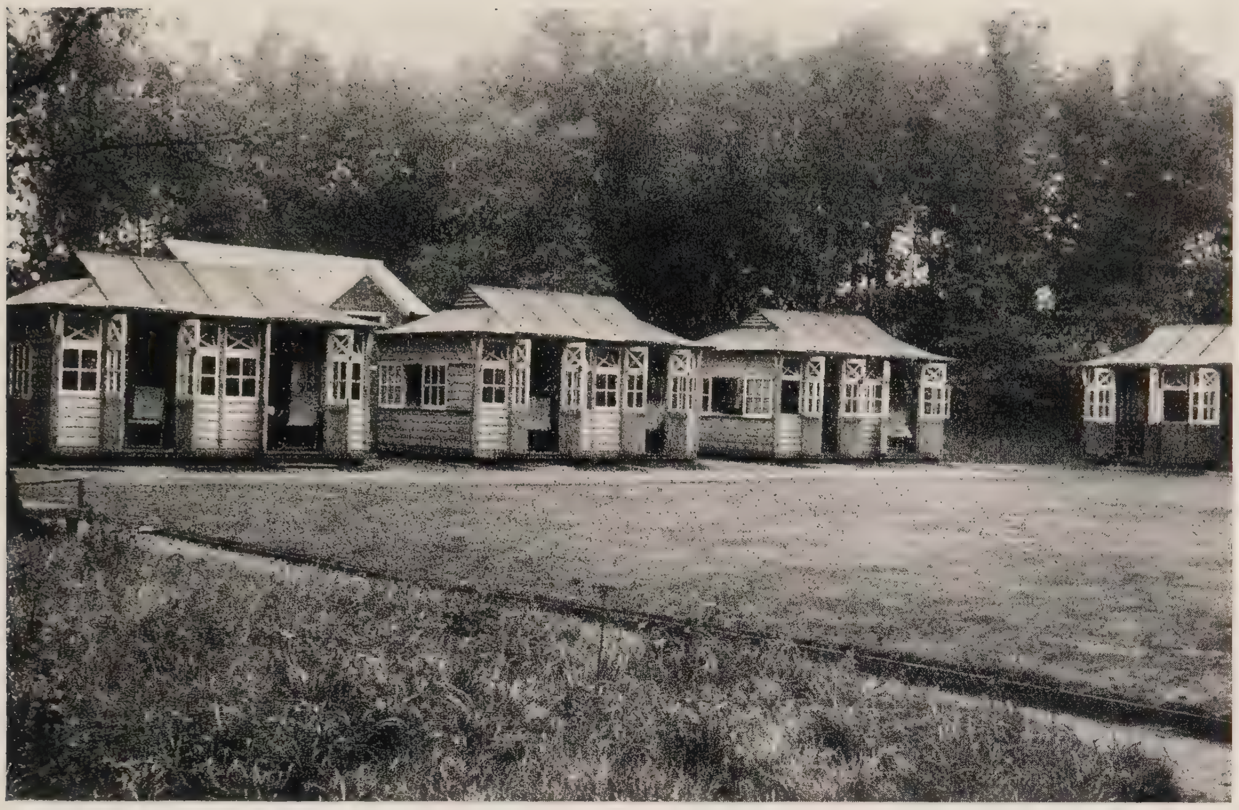
Patients discharged	176 days.
Patients who died in the sanatorium	128 days.
Observation cases discharged...	37 days.
Observation case which died in the sanatorium	18 days.

Dr. Charnock reports as follows :—

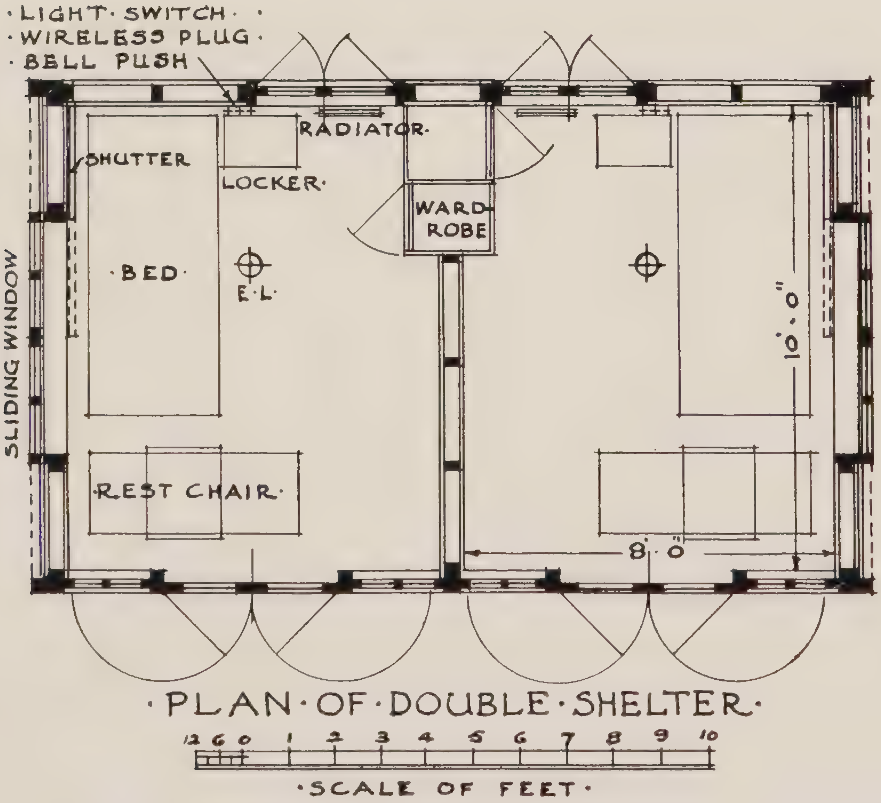
The accommodation has been greatly improved by the provision of ten double shelters of the latest type, which are fitted with steam heated radiators and electric light, and provided with wireless (see photograph and plan here inserted). A sanitary annexe has been built for the new shelters on the male side.

A quiet reading room has been established in the male recreation pavilion, suitably decorated and furnished. Patients can repair to

ELSWICK SANATORIUM.



Some of the new double sleeping shelters; photograph taken on the male side. Shelters are fitted with electric light, steam-heated radiators, emergency bells and wireless plugs.



Plan of double sleeping shelter illustrated above.

[*Plan drawn by County Architect.*]

this room to write or read undisturbed, the room being quite distinct from that in which the ordinary indoor games, such as billiards, dominoes, darts, and cards, are played. There is also a good library available, with abundant material suitable to all tastes. The outdoor recreations provided for the patients are bowls and clock golf.

The arrangements for the heating and lighting of the hospital have been receiving attention, and the overhead electric installation has now been replaced by underground cables. In the wards the cabling has been tubed and sunk into the walls, making the lighting installation more helpful and safer in treatment. Bakelite fittings have replaced all the old metal fittings. In addition, an up-to-date electric sterilizer has been provided in the operating theatre.

In the patients' scullery an electric washing-up machine has been installed in order that the crockery and cutlery can be sterilized. In the Home, the kitchen has been enlarged and modernised by the provision of electric stoves and boilers, and other modern essentials, including a meat cutter, have been installed. Additional lavatory accommodation has been provided in the Home to meet the needs of the staff.

During the time that the reconstruction has been taking place in the sanatorium the patients have taken the opportunity of assisting generally and have been well occupied in the various undertakings, engaging in wood-work, trenching, plumbing, painting; also in fruit farming, poultry farming, geese rearing, gardening, and basket chair repairing.

The milk supply has been bacteriologically and chemically examined at regular intervals, and has proved of excellent quality.

The sewage plant has been maintained in a good state, and produces a satisfactory effluent.

Inspection of the hospital and grounds was carried out in October by the members of the Fylde, Preston, and Garstang Joint Hospital Board (from whom the sanatorium is held on lease), and they were entertained to tea. They expressed their satisfaction at the general appearance of the institution and the good use which was being made of it.

The items relative to the work of diagnosis and treatment are as follow :—

Skiagrams, 283; screenings, 708; sedimentation tests, 292; pleural fluid examinations, 5; sputum examinations, 610; gasoline concentration tests, 16; artificial pneumothorax inductions, 39; artificial pneumothorax refills, 611.

Numbers of patients afforded special treatment in Elswick for the first time during 1934 :—

Artificial pneumothorax—	
Attempted	39
Abandoned	10
Satisfactory	27
Partially satisfactory	2
Gas replacements	2
Phrenicectomy	27
Gold salts (crisalbine)	6
Artificial light	1
Inhalation therapy	77

The numbers of patients in Elswick on the 31st December, 1934, who were receiving special treatment were as follow :—

Artificial pneumothorax	10
Phrenicectomy	11
Gold salts (crisalbine)	6
Inhalation therapy	10

The following Table 26 shows the number of phrenicectomies performed at the Elswick Sanatorium by Mr. Morriston Davies during the years 1931–34 :—

Year.	Number of patients on whom the operation of phrenicectomy was performed.						Number of such patients who were alive on 31/12/34.					
	Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.		Cases which did not receive artificial pneumothorax, or in which artificial pneumothorax had failed.		Cases in which phrenicectomy was supplementary to artificial pneumothorax.		Total.	
	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.	T.B. plus.	T.B. minus.
*1931	10	1	3	–	13	1	4	1	3	–	7	1
†1932	3	1	–	–	3	1	1	1	–	–	1	1
‡1933	13	–	7	3	20	3	7	–	6	3	13	3
§1934	10	1	13	1	23	2	6	1	11	1	17	2
Total	36	3	23	4	59	7	18	3	20	4	38	7
	39		27		66		21		24		45	

* Excludes 2 removals to other areas.
† ,, 1 ,, ,, ,,
‡ ,, 1 ,, ,, ,,
§ ,, 2 ,, ,, ,,

Ordinary religious services are held once per week, on Wednesday afternoon, and the clergy of the various denominations have frequently visited their patients in the sanatorium and been most helpful when called upon in urgent cases. Their ministrations have been appreciated by all.

It is a pleasure to record with appreciation the valuable help and co-operation given by Dr. W. Fettes.

Dr. R. D. Allison, the visiting dental surgeon, has given splendid service, and has attended the sanatorium regularly, and at times of dental urgency. His work has been of much assistance and has been greatly appreciated by patients and staff. During the year, 90 patients received some form of dental treatment, particulars of which are given in Chapter XXIII.

The good work done by Miss A. Jones and her excellent staff is hereby gratefully acknowledged.

In August, Miss I. G. Barclay retired from the matronship which she had held with dignity and efficiency for so many years. Her valuable services will be greatly missed, and it is the wish of all that she may enjoy many happy years of retirement.

The following Table 27 shows the condition of patients discharged from the Elswick Sanatorium during the year 1934 :—

Classification on admission to the sanatorium.	Condition at time of discharge.	Duration of residential treatment in the sanatorium.					Total.	
		Under 28 days	1—3 months	3—6 months.	6—12 months.	More than 12 months.	No.	%
T.B. minus.	Quiescent	1	1	5	5	—	12	30·8
	Improved	2	3	12	2	2	21	53·8
	No material improvement	3	1	1	—	—	5	12·8
	Died in sanatorium ...	1	—	—	—	—	1	2·6
T.B. plus 1.	Quiescent	—	—	2	2	—	4	30·8
	Improved	—	2	3	2	—	7	53·8
	No material improvement	1	—	—	—	—	1	7·7
	Died in sanatorium ...	1	—	—	—	—	1	7·7
T.B. plus 2.	Quiescent	—	—	1	8	2	11	13·9
	Improved	2	7	17	10	5	41	51·9
	No material improvement	2	5	3	2	1	13	16·5
	Died in sanatorium ...	3	3	4	3	1	14	17·7
T.B. plus 3.	Quiescent	—	—	—	—	—	—	—
	Improved	—	1	—	—	1	2	33·3
	No material improvement	—	1	—	1	—	2	33·3
	Died in sanatorium ...	—	1	—	1	—	2	33·3

Diagnosis on discharge from observation.	Stay under 4 weeks	Stay over 4 weeks.		
Tuberculous	3	3	6	46·2
Non-tuberculous	2	3	5	38·5
Doubtful	1	—	1	7·7
*Died	1	—	1	7·7

*Diagnosis : Streptococcal broncho-pneumonia.

Total .. 150

FYLDE DISPENSARY AREA.

Area (estimated population 85,967) embraces Fleetwood, Thornton Cleveleys, Fylde Rural, Garstang Rural (part), Lytham St. Annes (transferred from Area No. 1 on 1/10/34) and Kirkham districts.

Dr. Charnock reports :—

The work in the area has proceeded very smoothly, despite the addition of the Borough of Lytham St. Annes with a population of about 25,000. This has increased very materially the amount of time necessary on the district for both the tuberculosis officer and his nurse and has entailed much increased clerical work, but administratively it has proved to be a sound procedure. A number of cases from this borough are able to attend at Elswick dispensary, and pneumothorax refills are more conveniently given.

The co-operation with all general practitioners, medical officers of health, etc., has been cordially maintained throughout the year, and much assistance has been received from the various sanitary authorities in connection with the notification of cases, disinfections, and the erecting and storing of shelters, etc.

Patients have attended very regularly at the Fleetwood and Elswick Dispensaries. The administrative office is situated at Elswick, where artificial pneumothorax cases attend for refills and where all x-ray and laboratory investigations are carried out. The number of skiagrams taken of dispensary patients during the year was 311; the screenings numbered 104. The sputum tests made were 205, of which 35 were found to be positive, and the number of pneumothorax refills given was 95.

The scheme whereby the consultant tuberculosis officer has both the district and the sanatorium under his control works well in this area. The centralising of administration, investigation, and treatment adds to the convenience of working and is economical of time and energy. Patients from the area can, for the most part, be accommodated at Elswick Sanatorium, which they seem to prefer since it is near their homes and relatives.

The conscientious work done by Nurse A. Tweedy in the Fylde Area, despite the extra strain imposed upon her by the addition of Lytham St. Annes district, is hereby gratefully acknowledged.

Artificial light treatment. During the year the electric supply has been changed from direct current to alternating current. This has necessitated the complete overhaul of the whole of the plant, which has been beneficial, and a modern Kromayer lamp has been installed.

The types of cases treated include lupus, cervical adenitis with and without abscess formation, and peritonitis. The plant consists of two carbon arcs, using both A and B carbons, and a Kromayer lamp. Adjuvant measures, as adopted in previous years, have been continued as follow :—Aspirations, "puncture and seal," scraping, curetting under local anæsthesia, splinting of head and shoulder girdle in cervical adenitis, removal of keloids, plasters, and acid nitrate of mercury under borocaine anæsthesia.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 416 ; doubtful, 0.)	416

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of "*old*" *cases* and "*old*" *contacts*.
Patients' homes	77	330
Fleetwood Dispensary	112	631
Elswick Dispensary	59	200
	171	831

Attendances of patients at the Fleetwood Dispensary for artificial light treatment (51 individual patients)		1,148
Attendances for artificial pneumothorax treatment (10 individual patients)		95
Visits by tuberculosis officer to sanatoria, and pulmonary, special, and public assistance hospitals		21
Special visits by tuberculosis officer (*i.e.*, interviews with medical officers of health, general hospital officials, etc.)		2
Visits by dispensary nurse to patients' homes—		
Routine visits	1,362	1,871
Application of surgical dressings	208	
Adjustment of splints and surgical appliances	252	
Other actual nursing	49	
Patients' dispensary attendances for attention by nurse—		
Application of surgical dressings		37
Sanitary defects reported to local medical officers of health		2
Disinfections carried out by local sanitary authorities		49
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		97·2%

N.B.—On the 1st October, 1934, Lytham St. Annes was transferred from Area No. 1 to the Fylde Area, and the statistics for the last quarter of 1934 relative to Lytham St. Annes are, therefore, included in the above figures.

XIX.—WRIGHTINGTON HOSPITAL AND WIGAN COUNTY DISPENSARY AREA.

Medical Superintendent	Dr. E. H. Allon Pask.
(Dr. Pask is also consultant tuberculosis officer for the Wigan County Dispensary Area—*i.e.*, the area around and near the hospital—containing a population of 109,351).	
Visiting Consulting Orthopædic Surgeons ...	Mr. T. P. McMurray. Mr. Harry Platt.
Visiting Consulting Ophthalmic Surgeon ...	Mr. H. H. Bywater.
Visiting Consulting Urological Surgeon ...	Mr. C. A. Wells.
Assistant Tuberculosis Officer	Dr. J. E. Wallace.
Assistant Medical Superintendent ...	Dr. E. H. W. Deane.
Junior Assistant Medical Officer	Dr. J. Dobson.
Matron	Miss E. Moseley.
Assistant Matron	Miss M. L. Strudwick.

Wrightington Hospital, Appley Bridge, near Wigan.

The Wrightington Hospital is situated close to the high road between Standish and Parbold, about six miles north-west of Wigan; altitude 300 feet above sea level. A scheme for the adaptation of the Hall as a nurses' home and the erection of new buildings to provide accommodation for 226 patients was adopted by the County Council and approved by the Ministry of Health towards the end of 1927. The first patients were admitted on the 14th December, 1931.

The accommodation provided is utilised as under :—

Adults : Three one-storey pavilions (two for men and one for women). One pavilion contains 40 beds, and at one end for isolation a small ward for four beds and two single cubicles ; the other two pavilions each contain 30 beds for non-pulmonary cases and at one end cubicles for 10 combined cases of pulmonary and non-pulmonary tuberculosis	126 beds.
Children : Two one-storey pavilions for non-pulmonary tuberculosis ; each pavilion containing 40 beds, and at one end a ward for four beds, and two single cubicles for isolation on admission ...	92 beds.
Isolation block for outbreaks of infectious disease	8 beds.
	226 beds.

All the buildings are heated.

In addition to the patients' pavilions, there are the following buildings :—Treatment block, kitchen block, official block, power house, laundry, quarters for nurses and maids (modern portion of the Hall and an annexe), medical superintendent's house, seven cottages for male employees, outbuildings (utilised for garages, workshops, stores, etc.).

The capital cost of the Wrightington Hospital has worked out at £670 per bed with land, towards which the Ministry of Health made a grant of £40,680.

The water supply is obtained from a well (1¼ miles distant), which is the property of the County Council. New sewage works are installed on the estate. The electric light is from the public supply.

The Lancashire Education Committee have kindly arranged for lecturers to visit the institution to speak on social history and current events to adult patients; there are two part-time instructresses who teach handicrafts to both men and women. For the children there is a head teacher, with two assistants.

Mr. C. A. Wells, M.B., Ch.B., F.R.C.S., L.R.C.P., was appointed visiting consulting urological surgeon, and made his first visit to the institution on the 7th December, 1934.

During the year, 175 patients received from the visiting dental surgeon, Mr. J. J. Ward, some form of dental treatment, particulars of which will be found in Chapter XXIII.

The average length of stay of patients at Wrightington during 1934 was as under :—

Patients discharged	218 days.
Patients who died in the hospital	245 days.
Observation cases discharged...	70 days.
Observation cases which died in the hospital	180 days.

Dr. Pask reports as follows :—

During the year, 316 patients were admitted, 279 discharged, and 37 died. Table 28 on page 98 deals with the patients who were suffering from tuberculous conditions.

In addition to the 276 patients shown in Table 28, 28 adults and 12 children, the majority of whom had been admitted for observation purposes, were discharged as suffering from conditions other than tuberculosis, such as osteomyelitis, syringomyelia, perinephritic and intrahepatic abscess, renal calculus, Hodgkin's disease, and slipped epiphysis. Two of these patients died in hospital.

Table 28 gives an index of the incidence of the various lesions. It will be seen that of the bone and joint lesions the commonest site in adults is the spine (32 cases), and the hip is second in frequency (13 cases), whereas in children the number of spine and hip cases is about the same.

Table 28. Condition on discharge of 276 patients suffering from tuberculosis.

LESION.	ADULTS.					CHILDREN.				
	Quies.	Imp.	Stat.	Worse.	Died.	Quies.	Imp.	Stat.	Worse.	Died.
Spine—										
Cervical	—	1	—	—	—	—	—	—	—	1
Cervico-dorsal	—	—	—	—	—	1	—	—	—	—
Dorsal	7	4	—	—	—	5	2	1	—	2
Dorso-lumbar	1	1	—	—	—	—	1	—	—	—
Lumbar	10	2	2	—	4	2	2	—	—	—
Hip	7	5	1	—	—	19	—	—	—	1
Femur	—	2	—	—	—	—	—	—	—	—
Knee	4	1	—	—	—	13	—	—	—	—
Tibia	1	—	—	—	—	1	—	—	—	—
Fibula	—	—	—	—	—	1	—	—	—	—
Ankle	2	2	—	—	—	3	—	—	—	—
Bones of foot	—	5	—	—	1	1	—	—	—	—
Shoulder	—	2	—	—	—	—	—	—	—	—
Elbow	1	—	1	—	—	—	—	—	—	—
Wrist	—	2	1	—	—	—	—	1	—	—
Dactylitis	—	—	—	—	—	—	1	—	—	—
Rib	1	2	—	—	1	—	—	—	—	—
Sacro-iliac joint	3	2	—	—	—	—	—	—	—	—
Bursitis	—	1	—	—	—	—	—	—	—	—
Skin	1	1	—	—	1	1	—	—	—	—
Lupus	1	1	—	—	—	1	1	—	—	—
Peripheral glands	9	2	—	—	—	16	3	—	—	—
Peritonitis	11	3	3	—	2	5	2	1	—	2
Lungs	2	—	—	—	—	—	—	—	—	—
Genito-urinary	2	4	2	—	—	—	—	—	—	—
Empyema	—	—	—	—	—	—	1	—	—	—
Multiple lesions	5	3	1	—	6	1	1	1	—	1
Combined pulmonary and non-pulmonary	6	16	5	—	11	—	—	1	—	2
Total	74	62	16	—	26	70	14	5	—	9
	178					98				

During the year, 477 blood sedimentation tests have been made. All patients are tested on admission and discharge, and certain cases at more frequent intervals when receiving special treatment, *e.g.*, sanocrysin. The information obtained is of considerable value from a prognostic point of view. The method used is quite a simple one—a modification of the Cutler technique. It is carried out in the wards ; the readings are made by the sister-in-charge, and recorded on an appropriate chart. Blood sedimentation is now employed in most institutions for the treatment of tuberculosis, and it would be a great advantage if a standardised technique were employed for purposes of comparison.

The intravenous injection of uroselectan B. for help in the diagnosis of renal tuberculosis has been continued. Twenty-six cases were submitted to this examination during 1934 and the information obtained fully justifies its use. It requires no special technique or skill, and on this account is preferable to the more complicated retrograde pyelogram in which a catheter has to be inserted into the ureter. The intravenous pyelogram possesses the additional advantage of giving a picture of the condition of affairs in both kidneys as well as an indication of the functional activity of the kidneys.

During the year, 98 Mantoux tests have been made on children ; of these 96 proved positive and 2 were negative. The negative cases were sent in for observation purposes ; one proved to be a case of transient arthritis of the left hip and the other was found to be suffering from non-tubercular enteritis. Before a case is designated " Mantoux negative " three dilutions are employed—1/10,000 ; 1/1,000 ; and 1/100.

The following is a list of operations performed during 1934 :—

Abscesses incised and curetted	53
Amputations (thigh 5, leg 3, arm 3)	11
Arthrodesis of joints (hip)	2
Aspiration of chest	12
Aspiration of abscesses	355
Circumcision	4
Cranial decompression	1
Cystoscopy	2
Excision of bones and joints (fibula 1, sacro-iliac joint 1)	2
Excision of bursa	1
Excision of glands of neck	12
Excision lupus	1
Excision ulcer	1
Fixation of spine (Albee)	5
Incision and curettage of glands of neck	6
Joint manipulation (hip)	1
Lumbar puncture	4
Osteotomy (transtrochanteric 3, cuneiform 1) ...	4
Paracentesis abdominis	10
Phrenic evulsion	1
Removal aural polypus	1

Resection of rib	2
Sequestrectomy	5
Skin graft	1
Tonsillectomy	1

There were 139 plasters applied, and 33 casts taken for the making of celluloid splints.

The artificial light department has worked to full capacity, and 296 cases received light treatment during 1934. Artificial light forms a useful method of ancillary treatment, particularly during the winter months when heliotherapy is not available. It is doubtful if general light baths have any specific effect on bone and joint tuberculosis, but their use is amply justified for the general tonic effect.

Lupus. A certain number of lupus cases were admitted which did not respond to a course of artificial light therapy at the dispensaries, and it has been found that even in hospital some of them have proved resistant to light treatment alone. Further methods have had to be adopted to expedite healing. Sanocrysin has proved useful in certain cases. A salt-free diet quite frequently has helped to attain quiescence. In a few cases the lesions have been excised.

Glands. Very few gland cases are admitted owing to the fact that artificial light treatment is available at the dispensaries. Only 33 were admitted during the year. These were cases which proved resistant after a long period of ultra-violet radiation at the dispensaries, and the majority required operative measures, although a few responded so well to conservative treatment that operation was not necessary. This type of case usually comes from poor homes in which there are insufficient facilities for adequate treatment.

Wood's glass in connection with the Kromayer lamp for the detecting of ringworm is used as a routine on every child's head on admission. We have been free from this troublesome complaint since the hospital was opened ; one case only was discovered during the year, immediately the child arrived at the hospital, but she was not admitted.

Twenty-eight post-mortem examinations were carried out, and from these, as well as from post-operative material, a number of pathological specimens have been mounted, which will prove of use for teaching purposes. Very little difficulty is experienced in obtaining permission from the relatives for these examinations. An account of 50 autopsies done at Wrightington is to be found on pages 13 to 18.

Laboratory work. Cultivation of tubercle bacilli. Examinations of the following specimens have been made in the hospital laboratory :—Pus 43, urine 47, throat swabs 14, blood 14, fluid from knee 1, ear discharge 1, cerebro-spinal fluid 2, fæces 3, piece of tubercle from lung 1. Sputum : hospital patients 41 (positive 18, negative 23) ; dispensary patients 656 (positive 112, negative 544).

During the year Dr. Deane has been using a modification of Lowenstein's medium for the culture of tubercle bacilli and he reports as follows :—

The method consumes some little time and requires a careful and unvaried technique, but is not otherwise difficult of application. A fairly large amount of the sputum or other material to be examined is treated with a 4 per cent. solution of sodium hydrate in order to render it homogeneous and to destroy secondary infection. The liquid is then centrifuged for 20 minutes, and the sediment, after careful neutralisation, inoculated on to the medium which is contained in special screw-topped bottles to prevent drying during incubation. In successful cultures, colonies are usually well established in between two and three weeks, and appear as raised yellowish-white nodules on the green coloured medium.

So far 70 cultures as enumerated below have been made :—

TABLE 29.

Specimen.	Number of cultures made.	Result.	
		Positive.	Negative.
Pus	21	12	9
Sputum	26	7	19
Urine	17	8	9
Cerebro-spinal fluid...	3	2	1
Glands	3	—	3
Total	70	29	41

In many cases failure to grow bacilli has confirmed our opinions that a lesion was not tuberculous, so that a negative result does not necessarily mean a failure of the method.

The average time required for cultures to be definitely positive was 17 days, comparing favourably with the time taken for guinea pig inoculation tests.

Ten specimens (8 of urine and 2 of pus) were submitted to both guinea pig inoculation and culture with the following results :—

Guinea pig	−	+	−	+	−	−	−	−	+	+	4 positive.
Culture	−	−	−	−	+	−	+	+	+	+	5 positive.

The culture method therefore shows one more positive result than by guinea pig inoculation, and, although the series is too small to draw definite conclusions, it suggests in my opinion that culture is at least as reliable as guinea pig inoculation.

Material for guinea pig inoculation and special pathological investigation, which has been sent away for examination, consisted of :—Throat swabs for diphtheria 221, glands from neck 1, pus 8, urine 21, fæces 1, fluid 6, skin with ulcer 1, abscess under skin of chest 1, portion of aorta, aortic valve and mitral valve 1, brachial and radial arteries 1, cross section of decalcified fibula 1, granulomatous and caseous tubercle 1, piece of spleen 1, and piece of tonsil 1.

In addition to that of the hospital, the x-ray work of the Wigan County Area and the Heath Charnock Pulmonary Hospital is done at Wrightington. During 1934, the following skiagrams were taken :—Hospital patients 1,416, dispensary patients 518, Heath Charnock patients 22, total 1,956.

A 10 kw. Metalix tube was purchased during the year. The exposure time for chest skiagrams has been considerably shortened, and consequently a considerable improvement in the quality of the skiagrams has resulted.

Mr. Platt and Mr. McMurray, the consulting orthopædic surgeons, have paid monthly visits during the year and Mr. C. A. Wells has recently been appointed as visiting consulting urological surgeon ; I greatly appreciate their valuable advice and help.

Mr. Bywater has visited the hospital periodically to see eye cases which have been referred to him.

Many visits were paid during the year by members of public bodies and others interested in tuberculosis. These included :—

County Tuberculosis Committee.
Lancaster & District Joint Hospital Board (Sub-Committee).
Stannington Sanatorium, Northumberland (Sub-Committee).
Mr. C. E. James, Natal Anti-Tuberculosis Association.
Dr. M. C. Bywaters, Board of Education.
Dr. J. A. Glover, Board of Education.
Dr. J. Pearse, Ministry of Health.
Mr. A. P. Hughes Gibbs, Ministry of Health.
Dr. E. Donaldson, Ministry of Health.
Dr. R. M. Galloway, Medical Officer of Health, Bolton.
Mr. R. McNaught, Architect, Bolton.

The educational classes for adults, which were initiated two years ago, have been continued throughout the year. Mr. James and Mr. Bruce give weekly lectures on current events and social history.

Miss Roll teaches handicrafts, and an additional instructress—Mrs. Forster—has been appointed by the Education Committee to assist her as a result of the keen interest taken by the patients in these classes.

During the year the religious needs of the patients were considered by the Committee, and the arrangements made have worked smoothly and satisfactorily. I should like to record my appreciation of the chaplains—Rev. R. Schofield (Church of England), Rev. W. Gainsborough (Nonconformist), and Rev. Father Barry (Roman Catholic)—for their ministrations at the hospital.

The amusement of the patients has been catered for as in previous years, and my thanks are due to the various concert parties who have visited Wrightington. Fortnightly cinema entertainments are given during the winter months, but with the advent of the " talkies " the silent film is becoming somewhat out of date. The provision of an efficient portable " talkie " apparatus would be exceedingly popular.

The education of the children is in the hands of Mrs. M. Keyworth who has two assistants. She reports as follows :—

Number admitted during school year, 192. Discharges, 98.
Average number on books, 93. Average attendance, 90.

Of the 192 children who have passed through the school since the beginning of the school year, 43 were under 5 years of age, and the remainder were of varying ages up to 15. All participate in the school curriculum which is adapted to hospital conditions, the age of the child, mental capacity, and physical disability. Each child works separately ; if bright he or she pushes on rapidly, and if retarded or dull is encouraged and stimulated, and gains ground. Children who make no progress are a rare exception.

The mornings are devoted to elementary education, extra time being given to weather conditions, to direction of winds, clouds, and their meaning, and to height of the sun and phases of the moon. A rain gauge is kept, and the weather forecast and thermometer are read daily. The afternoon session is given up to handwork and music. Every child makes or helps to make some object that is both useful and ornamental. Colour is given a predominant place in the school life ; all materials used are gay and bright and the child chooses its own colouring and is encouraged to make its own design.

Junior girls delight in dressing dolls in woollies, and in making x-stitch canvas purses for their mothers. Senior girls are taught designing, plain and fancy needlework (which includes children's frocks and pinafores, tapestry, appliqué and Jacobean needlework), and also plain and fancy knitting of garments.

The babies make themselves very busy with Montessori and Froebel apparatus.

Junior boys are in their element when cutting out pictures and patterns, and making scrap books for the babies, kettle holders, and shopping bags. Senior boys have a variety of crafts including pewter repoussé, enamelling on metal-work and wood-work, basketry of all kinds, soft slipper making, rug making, and rush and cane seating.

A great feature of this year's handwork has been the soft toy making and rug making by senior and junior girls. There is no difficulty in finding a sale for the finished articles—parents are delighted to have all their children can make ; £64 has been taken this year in sales, making a total of £193 in three years.

The Lancashire Education Committee kindly arranged an exhibition of handwork at the Royal Lancashire Agricultural Show, held at Bolton, on August 2nd to August 6th, 1934, which was inspected by thousands of school children from the Lancashire schools.

From the 9th to the 12th October an exhibition of handwork was held at the International Exhibition of Cripples' Handwork at Bristol, under the auspices of the Central Council for the Care of Cripples. Hospitals in Australia, Labrador, America, and the British Isles were represented and showed an excellent standard of work. The Wrightington exhibits attracted a good deal of attention owing to the low age of the children who had executed the work and the standard attained. Diplomas were awarded if a certain standard of excellence was reached. The children's work gained 3 first class, 5 second class and 9 third class diplomas, and a special certificate of merit signed by the Earl of Dudley, who is the President of the Central Council for the Care of Cripples, was awarded for soft toy making. The particular exhibit which gained the certificate was a life-like rabbit made by a girl of 13.

So successful has the toy making been here that Miss Crabbe, the mistress responsible for teaching the craft, has been invited by two Educational Handwork Associations (Preston and Leicester) to demonstrate to teachers.

At Christmas the children of both wards gave the pantomime "Cinderella" to a very appreciative audience comprised of members of all staffs. This was adapted, written and produced by Miss Crabbe, who is also responsible for a daily class of convalescents, teaching them to walk by natural movements and dancing with music.

Nature walks are taken and gardening is done when the weather permits.

An inspection was made on the 8th May, 1934, by Dr. Muriel C. Bywaters, of the Board of Education, who appeared to be quite satisfied with the work which is going on, and who had no suggestions to make.

During the year two probationer nurses were entered for the Preliminary State Examination of the General Nursing Council and both were successful. They proceeded to one of our affiliated hospitals to complete their training, and will be excused a year's general training.

My thanks are due to my assistants, Dr. Deane and Dr. Dobson, the matron, Miss Moseley, and the nursing and clerical staffs for their loyal co-operation and help.

Paraplegia in Pott's Disease.

During the year I have investigated the patients with Pott's disease complicated with paraplegia treated in Wrightington since it was opened. The figures are set out below:—

TABLE 30.

Number of cases admitted with Pott's disease.	Number with paraplegia.	Percentage with paraplegia.
		%
83 men	21	25·3
63 women	2	3·2
30 boys	3	10·0
26 girls	6	23·1
202	32	15·8

It will be seen that 15·8 per cent. of the total number had paraplegia. Taylor and Lovett* in 1886 quote 13·0 per cent. with paraplegia in a series of 445 cases. A comparison with their figures suggests that the incidence of paraplegia in Pott's disease is not decreasing with the progress of time. The incidence of paraplegia in adults was eight times more frequent in men than women. The reason is, perhaps, because the vertebral column is subjected to greater strain and stress in men compared with women. In the small group of children paraplegia was found to occur twice as much in girls as in boys.

* Taylor & Lovett, *Medical Record*, 19th June, 1886.

The site of the lesion in the paraplegic cases showed that the dorsal region was most commonly affected, which is in accordance with the generally accepted view, the figures being :—Dorsal area 22 cases, dorso-lumbar area 7 cases, and lumbar area 3 cases. Twenty-two cases may be said to have terminated their hospital treatment, and the results show that 13 were discharged as cured (59 per cent.). The onset of paraplegia in Pott's disease is a grave complication, but it is by no means a hopeless condition, as in this series more than half showed complete recovery. No patient had any operative interference, and the results were attained by rest on either a Jones' frame, plaster bed, or spinal box with spinal jacket. The prognosis appears to be the same in either sex ; the percentage of recoveries was almost identical in men and women.

WIGAN COUNTY DISPENSARY AREA.

Area (estimated population 109,351) embraces Ashton-in-Makerfield, Hindley, Ince-in-Makerfield, and Wigan Rural districts.

Dr. Pask reports :—

During 1934 the helpful and extensive co-operation of the medical practitioners in the area was again enjoyed ; 93 per cent. of the new cases were referred to us prior to notification.

New cases and contacts seen during the year numbered 455, as against 461 during 1933.

Although the dispensary premises are within easy access of the bus termini, they are delightfully situated—the front overlooking the Wigan Corporation Central Park and the back the newly completed playing fields of the Grammar School. Recent repairs and improvements to the building, together with the provision of various articles of furniture and equipment, have added considerably to the convenience and comfort of the patients and staff.

The Wigan County District Care Committee has again rendered valuable service by expending £90 3s. 5d. on needy cases suffering from tuberculosis.

The x-ray and laboratory work for the area is done at the Wrightington Hospital. During 1934, 518 skiagrams and 363 screen examinations were made, and 661 specimens of sputum, etc. (positive, 113 ; negative, 548), were examined for tubercle bacilli.

Artificial pneumothorax treatment is given at the dispensary, and the patients are x-rayed periodically at Wrightington Hospital. During the year, 132 attendances were made for this purpose.

Again, of the total number of cases on the dispensary register in this area at the end of the year, more than 50 per cent. were non-pulmonary in character.

Dr. Wallace has continued the use of moogrol in cases of lupus, with satisfactory results, and a supplementary report of this work forms the subject of Chapter IV.

The following conditions were treated at the Wigan County Dispensary light clinic during 1934 :—Tuberculous adenitis (with and without softening), scrofuloderma, lupus vulgaris, erythema nodosum, and tuberculous osteitis with sinuses.

For the past twelve months both grade A and grade C carbons have been in use for general light baths, the maximum exposure to grade A being one hour as against 20 minutes to grade C. Patients attend twice a week. Very similar results are obtained from the two types of carbons and on clinical grounds alone it would seem that no distinction can be made. The shorter exposure necessary to grade C carbons is in some cases a definite convenience to both patients and staff.

Local applications of light from the Jesionek and Kromayer lamps are also given in suitable cases.

Patients' attendances at the dispensary for light treatment during 1934 numbered 4,246, or 687 more than in the previous year. The attendances as a whole are remarkably good ; in some cases the co-operation of employers has enabled patients to attend at the dispensary during working hours.

The most common non-pulmonary condition seen at the dispensary is that of adenitis, and care is exercised to establish a definite diagnosis of tuberculosis before recommending this type of case for light treatment. In doubtful cases, observation at the dispensary for a month or longer is carried out, during which time a portion of gland may be excised for microscopical examination, blood tests may be done, or the patient referred for a specialist opinion on ear, nose, throat, or teeth. In this way greater accuracy of diagnosis is assured and the results of treatment can be better estimated.

Summary of Dispensary Work.

Number of tuberculous cases under supervision on 31st December, 1934 (Definitely tuberculous, 738 ; doubtful, 4.)	742

Examinations by tuberculosis officer at—	Examinations of *new persons* and *new contacts* for diagnosis.	Re-visits or re-attendances of "*old*" *cases* and "*old*" *contacts.*
Patients' homes	148	283
Wigan Dispensary	307	1,921

Attendances of patients at the Wigan Dispensary for artificial light treatment (131 individual patients)		4,246
Attendances for artificial pneumothorax treatment (9 individual patients)		132
Attendances for moogrol treatment		272
Care committee meetings attended by—		
(*a*) Tuberculosis officers		9
(*b*) Tuberculosis health visitors		19
Lectures or addresses given		1
Visits by tuberculosis officers to sanatoria, and pulmonary, special, and public assistance hospitals		16
Special visits by tuberculosis officers (*i.e.*, interviews with medical officers of health, general hospital officials, &c.)		4
Visits by dispensary nurses to patients' homes—		
Routine visits	2,754	3,087
Application of surgical dressings	123	
Adjustment of splints and surgical appliances	161	
Other actual nursing	49	
Patients' dispensary attendances for attention by nurses—		
Application of surgical dressings		8
Sanitary defects reported to the local medical officers of health		23
Sanitary defects which after notification were remedied		15
Disinfections carried out by local sanitary authorities		133
Percentage of new cases referred by medical practitioners, &c., to tuberculosis officer for an opinion as to diagnosis or treatment *before* statutory notification		93·5%

XX.—CHADDERTON PULMONARY HOSPITAL, NEAR OLDHAM.

Visiting Medical Superintendent ...	DR. J. WOOD (to 31/10/34). DR. E. T. HOLDEN (Temporarily from 19/3/34, permanently from 1/1/35).
Matron	MISS I. FELSTEAD.

An agreement was made on the 1st October, 1919, with the Chadderton, Royton, and Crompton Joint Hospital Board for the use of the buildings at Racefield, erected as a smallpox hospital, for the treatment of patients suffering from pulmonary tuberculosis. Accommodation is provided for 44 female patients. The County Council are under an obligation to vacate the premises in case of an epidemic of smallpox.

The average length of stay of patients at Chadderton during 1934 was as under :—

Patients discharged	173 days.
Patients who died in the hospital	119 days.
Observation case which died in the hospital	36 days.

Dr. James Wood, who had been medical superintendent since the opening of the hospital in October, 1919, found it necessary on medical grounds to resign his superannuable post with the County Council on the 31st October, 1934. The County Tuberculosis Committee reported to the County Council their regret at the retirement of Dr. Wood who had given conscientious and satisfactory service during his occupancy of the post.

Dr. Holden reports as follows :—

During the year, 80 patients were admitted, 46 discharged (including two who were transferred to other institutions), and 28 died ; in addition, one case sent in for observation and diagnosis died in the hospital. Of the 29 patients who died, 19 had been in the hospital for under two months.

The number of sputum examinations made during the year was 389, of which 219 were positive and 170 negative. Towards the end of 1934, the x-ray apparatus at Peel Hall Pulmonary Hospital was transferred to Chadderton and installed in the wooden hut which had been converted into x-ray and treatment rooms. The apparatus was ready for use on the 27th November, 1934, and from that date to the end of the year, 26 skiagrams were taken and 28 screen examinations made.

In an institution such as Chadderton, where all the cases are in an advanced stage of the disease, there is only a very limited scope for collapse treatment. Unfortunately, very few of the patients admitted have unilateral disease or only slight involvement of the second lung and, in these, adhesions often interfere with a satisfactory collapse. Although it has been found possible to attempt an artificial pneumothorax on one or two patients, reliance has had to be placed chiefly on some form of gold therapy and, by the end of 1934, 18 patients had been started on a course of sanocrysin. Statistics referring to this cannot be included in the present report, but there is every reason to believe that the results will be highly encouraging and thoroughly justify a continuance of this line of therapy.

Although rest, good feeding, etc., remain the mainstay of our treatment, there can be no doubt that some active form of therapy is of great value to the majority of patients. The psychological effect of " having something done for them " is of itself of great benefit, apart from the material improvement effected by the special line of treatment instituted.

A modern wireless set with headphones for each patient has been installed. A hard tennis court has been constructed and is much appreciated by the staff. Various improvements have been effected to the hospital grounds. Good use was made of the patients' library, 434 books being lent out against 372 in the previous year.

Our thanks are due to the County Council for the special Christmas fare, to the concert parties who at various times have provided entertainment, and to the ministers who have attended to the religious needs of the patients.

In conclusion, I should like to express my appreciation of the willing and helpful co-operation of my colleagues of Dispensary Area No. 3, and the matron, Miss Felstead, and staff of the institution.

XXI.—HEATH CHARNOCK PULMONARY HOSPITAL, NEAR CHORLEY.

Visiting Medical Superintendent ... Dr. J. W. Rigby (Died 24/2/35).
Dr. J. Rigby.

(Dr. Rigby is also medical officer to the Chorley Joint Hospital Board).

Matron ... ... Miss H. Sinclair.

In 1914, by agreement with the Chorley Joint Hospital Board, the County Council leased 1½ acres of land adjoining the Board's isolation hospital on which they erected, equipped, and furnished two pavilions, dining hall, and additional accommodation for the staff.

The Joint Board are, by agreement, responsible for the maintenance, nursing, and treatment of the patients, the County Council paying to them the cost thereof.

Accommodation is provided for 34 patients—16 men and 14 women in the two pavilions, and four men in wooden sleeping shelters.

The average length of stay of patients at Heath Charnock during 1934 was :—

Patients discharged	165 days.
Patients who died in the hospital	78 days.

Dr. Rigby reports as follows :—

I wish to record the loss which the hospital has sustained in the sudden death of Dr. Brunwin, our visiting County Tuberculosis Officer. This loss was felt by all, as his monthly visits of inspection were looked forward to by both the patients and the staff, for help and guidance in the treatment of this prolonged disease.

During the year, 62 patients (36 men and 26 women) were admitted, 38 discharged, and 24 died.

The specimens of sputum examined numbered 104, and of these 78 were positive.

The x-ray examinations have been carried out at the Wrightington Hospital, where the patients are conveyed by ambulance. Afterwards the films are forwarded to this institution, accompanied by a full report.

The greatest improvement to record is that electric current has been brought to the hospital from the power company's mains. With this available, changes are contemplated in the type of work that will in future be carried out. It is proposed to instal an x-ray apparatus and provide a treatment block. These facilities will be a great help to the hospital and a stimulus to the patients.

The social side of the institution has upheld its previous record. The prolonged spell of dry weather helped to make the garden party and teas on special visiting days a success. As a result the patients' recreation fund has been maintained, enabling the usual trips and excursions to be carried out. The good feeding and kindly attention of the staff have avoided any complaints, and maintained that satisfaction amongst the patients which encourages them to continue in their long struggle against their complaint.

On the 1st April, 1935, I succeeded to the position of medical superintendent, owing to the lamented demise of Dr. J. W. Rigby, who had been in charge of the hospital since 1919.

XXII.—CARE WORK.

Under the Lancashire scheme dealing with tuberculosis, persons who apply for treatment are examined by the tuberculosis officer, either at their homes or at the dispensary, and, as and when required, are supplied with paper handkerchiefs and sputum flasks to prevent the spread of infection ; dressings if suffering from "open" surgical tuberculosis ; special nourishment, usually in the form of milk ; thermometers and appliances such as splints, crutches, supports and surgical boots ; and the loan of bedsteads and mattresses, if necessary, to enable patients in an infectious state to have a bedroom to themselves. This may be described as the *preventive* side of home treatment, and is, of course, additional and supplementary to the medical treatment of patients by their own doctors.

The various measures of social insurance (*e.g.*, the National Insurance Acts, the Widows', Orphans' and Old-Age Contributory Pensions Act, the Superannuation schemes of various bodies) are all valuable—and will be more so as time goes on—in reducing the number of cases of distress in tuberculous households.

With the transfer of the Poor Law functions to the County Council, arrangements have been made to continue co-operation with the Public Assistance Committee and their Guardians Committees so as to prevent overlapping in rendering assistance in necessitous or destitute cases.

The Ministry of Health, in a circular issued in December, 1923, laid down a scheme for co-operation between the managers of the various employment exchanges of the Ministry of Labour and the tuberculosis officers with regard to the employment in suitable occupations of male patients on discharge from sanatoria or hospitals. With the present large amount of unemployment in the country, there has been little opportunity for the scheme to show good results.

THE VOLUNTARY CARE COMMITTEES.

Despite the official measures and means of assistance there is still ample need for voluntary care committees, of which at the end of the year there were 17 recognised by the County Council, the whole covering an estimated population of 763,850 out of an estimated County population of 1,807,090.

The following are in general the objects for which the voluntary care committees may be said to stand :—

(1) To assist in the purchase of clothing which patients need when they go to a sanatorium or hospital.

(2) To provide food and clothes for poor patients who are receiving treatment at home.

(3) To give assistance (in kind) to dependants, so as to enable patients, for whom institutional treatment has been recommended, to take advantage of the opportunities provided under the County scheme.

(4) To assist patients, who are sufficiently recovered, to obtain suitable employment.

(5) To give suitable advice and encouragement to patients and their friends, and generally to assist the dispensary staff in the enlightenment of the public both as to the laws of health and the facilities for treatment.

Particulars of the populations served, the number of patients assisted, and the amounts expended during 1934 are as follow :—

TABLE 31.—*Work done by voluntary care committees.*

Name of committee.	Estimated population served 1934.	Number of individual patients assisted during 1934.	Expenditure on patients during 1934.		
			£	s.	d.
Ashton-under-Lyne and District... ...	68,358	66	222	2	8
Chorley and District	72,291	44	270	8	7
Earlestown, Newton and District ...	22,826	17	40	19	9
Egerton, Eagley, Dunscar and District...	5,623	1	—	14	9
Farnworth and District	67,290	31	78	3	3
Golborne	14,050	12	21	15	8
Horwich	15,200	25	143	0	0
Huyton-with-Roby District	8,077	6	25	15	8
Lancaster and District	92,042	18	223	0	11
Leigh and District...	84,850	95	151	3	4
Prescot and District	23,102	10	66	2	1
Prestwich	27,180	1	4	13	10
*Radcliffe, Whitefield and District Relief Fund for Consumptives ...	37,670	24	138	17	11
Stretford Civic Guild of Help	58,460	41	58	11	2
Westhoughton	15,730	10	23	13	10
Widnes	41,750	36	98	17	6
Wigan County District	109,351	59	90	3	5
TOTAL	763,850	496	£1,658	4	4

* Relates to year ended 31st March, 1935.

The County Council has continued to make a grant of 33⅓ per cent. of the committees' expenditure on actual assistance to patients.

The annual reports and balance sheets of the various committees are considered by the County Tuberculosis Committee, who have expressed their earnest appreciation of the valuable voluntary work carried out.

The following visits of voluntary care committees to County sanatoria and hospitals have taken place :—

Horwich Care Committee ...	Lancaster Pulmonary Hospital	25th May, 1935.
Ashton-under-Lyne and District Care Committee ...	Withnell Pulmonary Hospital	4th June, 1935.

The County Tuberculosis Committee encourage these visits as they enable the members of the care committees to see at first hand the institutional side of the scheme.

Care Work through Dispensary Organisation.

The voluntary care committees only cover a little less than half the County, and there is left a balance of over 1,000,000 persons to be dealt with by other means, pending the formation of new voluntary committees. In the areas without care committees the County Council have charged the tuberculosis dispensary staff with the duty of carrying out the relief work.

With regard to finance, the Council decided to take as a basis the amount voted to the voluntary committees and in proportion to population to grant a similar sum for the relief of patients in the remainder of the County area. Thus the Council's expenditure on care work is fairly evenly distributed throughout the County, the districts where there are voluntary committees at work having the advantage of the additional funds obtained by them from outside sources.

Grants to necessitous patients or their dependants are made on the recommendation of the consultant tuberculosis officers, with the following general objects :—

(*a*) To assist in the purchase of clothing which patients need when they go to a sanatorium or hospital.

(*b*) To provide food and clothes for necessitous patients who are receiving treatment at home, and for those who have returned from an institution with no chance of resuming work.

(*c*) To give assistance (in kind) to dependants, so as to enable patients, for whom institutional treatment has been recommended to take advantage of the opportunities provided under the County scheme.

All assistance, wherever possible, to be given by orders on tradesmen.

The tuberculosis officers report that the scheme is working very satisfactorily and assisting materially in aiding patients to undergo treatment.

During 1934, assistance was afforded through the dispensary staff to 252 individual patients, the amount expended being £637 19s. 2d. The assistance was mainly in the provision of milk, groceries and clothing.

The whole Administrative County is therefore covered by a complete scheme.

XXIII.—DENTAL TREATMENT.

Patients eligible for dental treatment are those who, in the opinion of the medical superintendent or the tuberculosis officer, are unable to derive full benefit from their treatment for tuberculosis owing to defective teeth. Patients already covered by dental schemes of other bodies, *e.g.*, school children at home and tuberculous pensioners, are excluded from benefit. For insured persons who are tuberculous many approved societies make a contribution towards the cost of dental attention required.

At the following County sanatoria and hospital the dental work is carried out by a visiting dentist:—High Carley, Oubas House, Elswick, and Wrightington. At the other County institutions, *e.g.*, Peel Hall, Rufford, Withnell, and Wolstenholme Pulmonary Hospitals, a local dentist is called upon to visit as and when required.

The statement below shows the dental work carried out during 1934, under the scheme approved by the County Council:—

TABLE 32.

Institution.	Number of individual patients who received dental attention.	New dentures provided.		Repairs to dentures.	Extractions.	Fillings.	Scalings and cleanings.	Other operations.
		Complete sets.	Partial sets.					
High Carley ...	171	20	13	14	418	77	2,539	364
Oubas House (Children)	18	—	—	—	26	8	—	13
Elswick	90	—	1	9	83	6	58	20
Wrightington ...	175	17	19	16	561	86	443	99
Other sanatoria and hospitals	54	16	7	10	364	9	4	—
Dispensary patients	28	17	9	2	336	—	1	2
TOTAL	536	70	49	51	1,788	186	3,045	498

The dental scheme, considering the benefit derived by the patients, has proved economical, and continues to be justified.

XXIV.—INSTITUTIONAL ACCOMMODATION.

On the 31st December, 1934, there were altogether 911 beds at sanatoria and hospitals occupied by County patients, as compared with 875 at the end of 1933. The number of beds occupied by pulmonary cases worked out at 76 per 100 pulmonary deaths; for non-pulmonary tuberculosis the proportion was 112 beds per 100 non-pulmonary deaths.

Table 33 below gives a summary of the beds occupied at the end of 1934 at the several types of institutions, the names of which are contained in Appendix XI :—

Type of institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
Institutions for pulmonary tuberculosis	577	32	1	3	613
Training colonies	9	—	6	—	15
Institution with accommodation for combined tuberculosis	22	3	—	—	25
Beds occupied by observation cases	4	4	2	3	13
Institutions for non-pulmonary tuberculosis ...	1	—	113	131	245
Total	613	39	122	137	911
	652		259		

The number of beds in occupation by County patients on the 31st December of each year is as follows :—1926, 825; 1927, 819; 1928, 858; 1929, 874; 1930, 906; 1931, 875; 1932, 931; 1933, 875; and 1934, 911.

Of the 911 beds occupied, 659 were in sanatoria or hospitals belonging to the County Council, and 252 were in non-County institutions.

Of the 652 beds occupied by pulmonary patients, 79 per cent. of the cases were classified as "T.B. plus," that is, sometime during treatment their sputum was positive.

The list of patients waiting for institutional treatment averaged at monthly periods during 1934, was as follows :—Sanatoria, adults 18, pulmonary hospitals, adults 12; special hospitals, adults 10, children 5; general hospitals, adults 2.

A return was obtained from the medical superintendents of Public Assistance hospitals of the number of patients suffering from tuberculosis chargeable to the Lancashire County Council who were in such hospitals on the 31st December, 1934. The following statement has been prepared from the returns so furnished :—

TABLE 34.

	Patients in Public Assistance hospitals on 31st December, 1934.				
	Adult males.	Adult females.	Children.	Total.	
Pulmonary tuberculosis	15	12	—	27	42
Non-pulmonary tuberculosis ...	5	5	5	15	

The foregoing total of 42 cases (compared with 50 at end of 1933) in Public Assistance hospitals contains those tuberculous patients whose mental condition, or other complication, does not permit of their being treated in sanatoria and hospitals. Every effort is made to transfer as soon as possible patients who require special treatment for tuberculosis to the sanatoria and hospitals provided for such treatment.

Further particulars of the residential treatment for tuberculous patients in Public Assistance hospitals are given in Appendix VII.

XXV.—TREATMENT, OCCUPATIONAL TRAINING, AND VILLAGE SETTLEMENTS.

A complete tuberculosis scheme has facilities for sending carefully selected patients to village settlements where they can undergo a probationary period of treatment combined with training to fit them to live with their families in cottages forming part of the village settlement, or, if single, to enter the hostel in such settlement. The main factors to be considered when making the selection are: the inadvisability of the patient returning to his normal occupation, the unsuitability of the home circumstances of the patient, temperamental suitability, the medical condition, age of the patient, and the likelihood of the patient and family to become successful settlers.

So far, the principal village settlements established in England are: Papworth Village Settlement, Cambridge (Medical Director, Sir Pendrill Varrier Jones); British Legion Village, Preston Hall, Aylesford, Kent (Medical Director, Dr. J. B. McDougall); East Lancashire Tuberculosis Colony, Barrowmore Hall, Chester (established and administered by the Order of St. John and the British Red Cross Society—Medical Director, Dr. E. L. Sandiland).

Arrangements exist for County patients to be sent to each of these settlements upon agreed terms, and the following statement shows the number entering the settlements and the number who still remain:—

TABLE 35.

Name of settlement.	Number of patients who entered the settlement to 31-12-34.	Number of patients who left the settlement.	Number of patients who died in the settlement.	Number of patients in the settlement on 31-12-34.
Papworth Village Settlement	2	—	1	1
British Legion Village ...	4	1	—	3
East Lancashire Tuberculosis Colony	21	6	4	11

A village settlement with its associated workshops, seeking orders in the open market at competitive rates, makes this aspect of a settlement similar to a large business with consequent commercial risks. It is generally agreed that local authorities, owing to methods of public finance to mention but one factor, are unable themselves to manage village settlements, hence co-operation with settlements under the control of voluntary bodies is advisable.

At the present time (September, 1935), negotiations are in progress with the East Lancashire Tuberculosis Colony to extend their workshops and provide additional houses for settlers in order to meet the needs of County patients.

In addition to patients who receive training in a workshop preparatory to entering a settlement and to those who receive treatment and undertake work as occupational therapy, arrangements exist for suitable patients, both pulmonary and non-pulmonary, to receive training in a definite occupation in order to fit them to return to useful employment. Patients sent for such training combined with treatment are youths who have had little or no employment and who require occupational training under sanatorium conditions. The following statement shows the patients who have been afforded training combined with treatment :—

TABLE 36.

Name of institution.	Number of patients admitted to 31-12-34.	Patients discharged.		Number of patients undergoing training on 31-12-34.
		Training completed.	Training terminated before completion of course.	
Burrow Hill Sanatorium Colony	4	3	1	—
Derwen Cripples' College	9	1	3	5
St. Vincent's Orthopædic Hospital	2	1	1	—

Here again every care has to be taken in selecting patients to undergo training, as much public money can be expended in attempting to train persons who prove to be unsuitable.

XXVI.—HOME TREATMENT AND DISPENSARY TREATMENT OR SUPERVISION.

All notified cases of tuberculosis while at home are under the supervision of the tuberculosis officers and tuberculosis health visitors, in addition to the treatment that may be obtained from their medical attendants. Ordinary medical treatment at dispensaries (as distinct from special treatment such as artificial light and artificial pneumothorax) has never been undertaken, unless the patient has no doctor or requires some special form of treatment. The number of consultations with medical practitioners in 1934 was as follows :—Personal, 700 ; otherwise, 5,547 ; total, 6,247.

APPENDIX I.

DEATH-RATES for 1934 from tuberculosis in 110 urban and rural districts in Lancashire, and in the 8 County dispensary areas.

Sanitary district.	Estimated population, 1934.	Pulmonary tuberculosis.			Non-pulmonary tuberculosis.	
		Number of deaths, 1934.	Death-rate per 1,000 of population, 1934.	*Average* death-rate 5 years, 1929–33.	Number of deaths, 1934.	Death-rate per 1,000 of population, 1934.
URBAN						
Abram	6,670	1	0·14	0·61	2	0·29
Accrington (B)	41,470	10	0·24	0·57	3	0·07
Adlington	4,162	1	0·24	0·97	—	—
Ashton-in-Makerfield	20,060	7	0·34	0·39	2	0·09
Ashton-under-Lyne (B)	50,180	29	0·57	0·70	5	0·09
Aspull	6,860	4	0·58	0·49	2	0·29
Atherton	20,410	5	0·24	0·46	1	0·04
Audenshaw	9,690	4	0·41	0·57	1	0·10
Bacup (B)	20,180	10	0·49	0·58	—	—
Barrowford	5,133	1	0·19	0·36	1	0·19
Billinge and Winstanley	5,174	1	0·19	0·61	2	0·38
Blackrod	3,498	1	0·28	0·48	—	—
Brierfield	7,542	6	0·79	0·65	1	0·13
Carnforth	3,196	—	—	0·74	—	—
Chadderton	27,420	17	0·61	0·58	8	0·29
*Chorley (B)	30,290	13	0·42	0·43	9	0·29
Church	5,918	5	0·84	0·44	—	—
Clayton-le-Moors	7,588	1	0·13	0·44	1	0·13
Clitheroe (B)	11,690	4	0·34	0·45	1	0·08
Colne (B)	23,150	18	0·77	0·71	6	0·25
Crompton	14,230	7	0·49	0·53	3	0·21
Dalton-in-Furness	10,150	1	0·09	1·09	—	—
Darwen (B)	34,180	14	0·40	0·37	2	0·05
Denton	18,270	11	0·60	0·53	2	0·10
Droylsden	16,170	10	0·61	0·85	2	0·12
Eccles (B)	43,370	24	0·55	0·67	7	0·16
Failsworth	16,370	17	1·03	0·61	—	—
Farnworth	28,220	15	0·53	0·57	6	0·21
Fleetwood (B)	23,670	20	0·84	0·56	1	0·04
Formby	8,565	3	0·35	0·56	—	—
*Fulwood	9,407	2	0·22	0·14	1	0·11
Golborne	14,050	6	0·42	0·73	1	0·07
Grange-over-Sands	2,344	4	1·70	0·51	1	0·42
Great Crosby	23,310	11	0·47	0·39	2	0·08
Great Harwood	12,000	5	0·41	0·45	2	0·16
Haslingden (B)	16,060	4	0·24	0·49	—	—
Haydock	10,420	3	0·28	0·55	2	0·19
Heywood (B)	26,140	14	0·53	0·70	3	0·11
Hindley	21,060	20	0·94	0·75	1	0·04
Horwich	15,200	5	0·32	0·45	1	0·06
Huyton-with-Roby	8,077	7	0·86	0·59	1	0·12
Ince-in-Makerfield	22,110	15	0·67	0·86	3	0·13
Irlam	13,120	8	0·60	0·57	2	0·15
Kearsley	11,100	5	0·45	0·52	—	—
Kirkham	4,085	2	0·48	0·86	1	0·24
Lancaster (B)	45,380	13	0·28	0·59	3	0·06
Lees	4,517	1	0·22	0·53	1	0·22
Leigh (B)	45,420	20	0·44	0·60	8	0·17
Leyland	10,930	4	0·36	0·31	1	0·09
Litherland	16,790	19	1·13	1·22	—	—
Littleborough	11,740	3	0·25	0·34	—	—
Little Lever	4,890	5	1·02	0·47	1	0·20
Longridge	4,075	3	0·73	0·66	1	0·24
Lytham St. Annes (B)	25,010	11	0·43	0·39	4	0·15
Middleton (B)	28,880	11	0·38	0·57	3	0·10
Milnrow	8,446	4	0·47	0·32	—	—
Morecambe and Heysham (B)	27,130	15	0·55	0·47	2	0·07
Mossley (B)	11,600	1	0·08	0·51	1	0·08
Nelson (B)	37,360	20	0·53	0·52	9	0·24
Newton-in-Makerfield	20,570	9	0·43	0·83	5	0·24
Ormskirk	17,670	7	0·39	0·63	2	0·11
Orrell	7,359	—	—	0·39	1	0·13
Oswaldtwistle	13,580	4	0·29	0·58	2	0·14
Padiham	11,300	7	0·61	0·57	1	0·08
*Poulton-le-Fylde	5,480	2	0·40	0·43	—	—
Preesall	2,092	—	—	0·19	1	0·47

Appendix I. (cont.).

Sanitary district.	Estimated population, 1934.	Pulmonary tuberculosis.			Non-pulmonary tuberculosis.	
		Number of deaths, 1934.	Death-rate per 1,000 of population, 1934.	*Average* death-rate 5 years, 1929–33.	Number of deaths, 1934.	Death-rate per 1,000 of population, 1934.
Urban (contd.)						
Prescot	11,460	1	0·08	0·71	3	0·26
Prestwich	27,180	9	0·33	0·49	1	0·03
Radcliffe (B)	26,980	13	0·48	0·68	3	0·11
Rainford	3,590	1	0·27	0·55	—	—
Ramsbottom	15,220	12	0·78	0·65	2	0·13
Rawtenstall (B) ...	28,020	10	0·35	0·47	2	0·07
*Rishton	6,291	5	0·79	0·71	1	0·15
Royton	16,410	9	0·54	0·64	2	0·12
Skelmersdale	6,034	2	0·33	0·50	1	0·16
Standish-with-Langtree	7,606	2	0·26	0·40	—	—
Stretford (B)	58,460	34	0·58	0·68	10	0·17
Swinton &Pendlebury(B)	38,400	25	0·65	0·52	8	0·20
*Thornton Cleveleys ...	11,090	6	0·54	0·79	—	—
Tottington	6,300	3	0·47	0·27	—	—
Trawden	2,466	2	0·81	0·31	1	0·40
Turton	11,590	8	0·69	0·51	—	—
Tyldesley	19,020	4	0·21	0·58	5	0·26
Ulverston	9,260	5	0·53	0·60	1	0·10
Upholland	5,849	3	0·51	0·38	—	—
Urmston	26,630	13	0·48	0·51	5	0·18
*Walton-le-Dale ...	13,037	6	0·46	0·55	1	0·07
Wardle	4,414	4	0·90	0·35	1	0·22
Waterloo-with-Seaforth	30,860	22	0·71	0·89	2	0·06
Westhoughton ...	15,730	6	0·38	0·50	2	0·12
Whitefield	10,690	3	0·28	0·55	2	0·18
Whitworth	8,113	8	0·98	0·73	2	0·24
Widnes (B)	41,750	22	0·52	0·97	8	0·19
*Withnell	2,951	—	—	0·45	—	—
Worsley	23,080	11	0·47	0·39	2	0·08
*Total Urban ...	1,580,659	779	0·49	0·59	200	0·12
Rural						
*Blackburn	11,540	2	0·17	0·27	—	—
Burnley...	17,990	9	0·50	0·53	1	0·05
†Chorley	23,958	9	0·37	0·34	5	0·20
Clitheroe	8,833	1	0·11	0·33	3	0·33
*Fylde	9,630	5	0·40	0·38	3	0·24
Garstang	11,690	5	0·42	0·23	2	0·17
Lancaster	9,800	4	0·40	0·39	—	—
Limehurst	8,488	4	0·47	0·56	1	0·11
Lunesdale	6,536	—	—	0·30	—	—
*Preston	30,353	4	0·12	0·38	4	0·12
Ulverston	16,420	6	0·36	0·33	3	0·18
Warrington	16,070	2	0·12	0·49	—	—
West Lancashire ...	27,240	6	0·22	0·41	4	0·14
*Whiston	21,280	9	0·41	0·38	4	0·18
Wigan	6,603	3	0·45	0·59	1	0·15
*Total Rural ...	226,431	69	0·29	0·40	31	0·13
*Total for Administrative County ...	1,807,090	848	0·46	0·56	231	0·12
Dispensary Areas						
*No. 1	246,683	85	0·33	0·45	30	0·11
*No. 2	333,881	146	0·43	0·51	37	0·11
No. 3	367,448	194	0·52	0·59	43	0·11
No. 4	361,900	181	0·50	0·57	58	0·16
*No. 5	263,686	124	0·46	0·69	34	0·12
Furness...	38,174	16	0·41	0·61	5	0·13
‡Fylde	85,967	46	0·55	0·50	10	0·12
Wigan County	109,351	56	0·51	0·60	14	0·12

* Consequent on the alteration of boundaries on the 1st April, 1934, the death-rates have been calculated on the following adjusted populations supplied by the Registrar-General:—Chorley (B), 30,252; Fulwood, 8,982; Poulton-le-Fylde, 4,932; Rishton, 6,301; Thornton Cleveleys, 11,052; Walton-le-Dale, 13,035; Withnell, 2,926; Blackburn Rural, 11,552; Fylde Rural, 12,260; Preston Rural, 30,987; Whiston Rural, 21,515; Urban districts, 1,579,593; Rural districts, 230,004; Administrative County, 1,809,597; Dispensary Area No. 1, 251,799; Dispensary Area No. 2, 333,903; Dispensary Area No. 5, 263,921.

† On the 1st April, 1934, the Urban District of Croston was abolished and became a township in the Chorley Rural District; the death-rates have been calculated on an adjusted population of 24,020.

‡ Consequent on the alteration of boundaries on the 1st April,1934, the death-rates have been calculated on an adjusted population of 83,101; on the 1st October, 1934, Lytham St. Annes (B) was transferred from Dispensary Area No. 1 to the Fylde Dispensary Area, and all the deaths from tuberculosis in 1934 in that borough have been included in the total for the Fylde Area.

TABLE B.

ADMINISTRATIVE COUNTY OF LANCASTER.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

CORRECTED* SUMMARY OF NOTIFICATIONS OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS DURING THE FIFTY-TWO WEEKS ENDED 29TH DECEMBER, 1934.

(Extracted from Weekly Returns of District Medical Officers of Health.)

NOTIFICATIONS ON SCHEDULE A—Excluding Duplicates.

	PULMONARY.						NON-PULMONARY.																																					
							BONES AND JOINTS.																		ABDOMINAL.			GENITO-URINARY.										PERIPHERAL GLANDS.					Total Pulmonary and Non-Pulmonary.	Total Notifications (*i.e.*, including cases previously notified by other Doctors).
								Trunk.		Arm.							Leg.																											
	Lungs only.	Lungs and Larynx.	Larynx.	Bronchial Glands.	Mediastinal Glands.	TOTAL.	Head (including Middle Ear).	Ribs and Sternum.	Spine.	Shoulder.	Scapula.	Humerus.	Elbow.	Radius.	Ulna.	Hand and Wrist.	Hip and Pelvis.	Femur.	Knee.	Tibia.	Fibula.	Foot and Ankle.	Two or more different Joints.	Not Classified.	Intestines.	Peritoneum.	Mesenteric Glands.	Bladder.	Fall. Tube.	Kidney.	Prostate.	Suprarenal.	Testicle and Epididymis.	Not Classified (two or more).	MENINGITIS (Brain).	MILIARY (Generalised).	SKIN (Lupus).	Axillary.	Cervical.	Inguinal.	MISCELLANEOUS.	TOTAL.		
Thirteen weeks ended 31st March, 1934 ...	311	3	...	...	...	314	...	1	11	...	...	1	...	...	...	5	10	...	3	...	1	1	2	1	4	24	7	1	2	4	...	...	3	1	18	3	12	...	77	...	4	196	510	608
Thirteen weeks ended 30th June, 1934 ...	342	3	1	1	...	347	1	2	13	2	...	...	1	...	...	2	14	3	5	...	1	4	4	1	2	19	11	...	1	3	...	...	3	...	21	1	12	1	96	...	6	229	576	658
Thirteen weeks ended 29th September, 1934...	341	3	...	...	...	344	...	1	18	...	...	...	1	...	...	...	13	...	4	1	...	3	1	1	3	20	2	...	...	2	...	...	2	...	12	...	7	1	82	3	3	180	524	597
Thirteen weeks ended 29th December, 1934...	302	5	2	...	1	310	...	3	17	...	...	...	1	...	...	3	6	1	7	...	...	2	...	1	2	14	3	...	1	1	...	...	5	2	11	...	6	...	77	1	5	169	479	536
Total	1296	14	3	1	1	*1315	1	7	59	2	...	1	3	...	...	10	43	4	19	1	2	10	7	4	11	77	23	1	4	10	...	...	13	3	62	4	37	2	332	4	18	*774	*2089	2399

NOTIFICATIONS ON SCHEDULE A—Excluding Duplicates.

		PULMONARY.													NON-PULMONARY.													Total Pulmonary and Non-Pulmonary.	Number of Cases Notified on Form I. (Admissions).		Number of Cases notified on Form II (Discharges from Institutions).
		AGE-GROUP—YEARS.													AGE-GROUP—YEARS.																
	SEX.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	TOTAL.	TOTAL M. & F.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	TOTAL.	TOTAL M. & F.		Public Assistance Hospitals.	Sanatoria.	
Thirteen weeks ended 31st March, 1934 ...	M.	1	1	...	4	9	21	43	48	27	16	4	174	314	2	12	20	17	12	2	8	4	4	2	1	84	196	510	12	331	283
	F.	1	2	3	4	16	33	36	25	13	5	2	140		6	10	14	11	25	11	19	12	2	1	1	112					
Thirteen weeks ended 30th June, 1934 ...	M.	...	1	1	2	18	23	36	37	41	19	6	184	347	4	19	17	23	8	6	15	6	5	1	...	104	229	576	25	309	286
	F.	1	3	...	4	28	35	46	19	11	11	5	163		1	14	26	19	17	8	22	8	6	1	3	125					
Thirteen weeks ended 29th September, 1934 ...	M.	...	1	3	1	8	30	52	34	36	19	6	190	344	3	12	20	10	10	7	8	5	5	2	3	85	180	524	12	334	335
	F.	...	3	5	2	24	33	38	24	13	10	2	154		4	12	12	19	10	7	14	9	4	3	1	95					
Thirteen weeks ended 29th December, 1934 ...	M.	...	...	...	1	12	25	30	37	35	19	9	168	310	1	17	22	11	6	7	12	4	4	2	1	87	169	479	6	287	292
	F.	...	1	3	4	16	34	43	19	13	7	2	142		1	10	17	16	11	10	10	3	3	1	...	82					
Total	M.	1	3	4	8	47	99	161	156	139	73	25	716	*1315	10	60	79	61	36	22	43	19	18	7	5	360	*774	*2089	55	1261	1196
	F.	2	9	11	14	84	135	163	87	50	33	11	599		12	46	69	65	63	36	65	32	15	6	5	414					

* Corrected figures after deducting 38 pulmonary and 51 non-pulmonary cases notified in error by practitioners.

TABLE C.

ADMINISTRATIVE COUNTY OF LANCASTER.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.

ANALYSIS OF THE NOTIFICATIONS ON SCHEDULE A (EXCLUDING DUPLICATES) RECEIVED DURING THE FIFTY-TWO WEEKS ENDED 29TH DECEMBER, 1934. († Corrected figures.)

(Extracted from Weekly Returns of District Medical Officers of Health.)

	AGE—YEARS.	...	0 — 1			1 — 5			5 — 10			10 — 15			15 — 20			20 — 25			25 — 35			35 — 45			45 — 55			55 — 65			65 & over.			TOTAL.			...
	SEX.	Col.	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	M.	F.	Both Sexes	Col
PULMONARY—																																							
	Lungs only ...	1	1	2	3	3	8	11	4	11	15	7	14	21	47	84	131	98	133	231	159	163	322	154	84	238	137	49	186	70	32	102	25	11	36	705	591	1296	1
	Lungs and Larynx...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	1	...	1	1	3	4	2	1	3	3	1	4	...	...	...	8	6	14	2
	Larynx ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	2	1	3	3
	Bronchial Glands ...	4	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	4
	Mediastinal Glands ...	5	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	5
	PULMONARY TOTAL ...	6	1	2	3	3	9	12	4	11	15	8	14	22	47	84	131	99	135	234	161	163	324	156	87	243	139	50	189	73	33	106	25	11	36	716	599	† 1315	6
	*Cases—Pulmonary and Non-Pulmonary combined ...		...	...	...	1	1	2	...	...	...	1	...	1	3	1	4	3	3	6	2	3	5	3	...	3	2	1	3	...	...	...	...	...	...	15	9	24	
NON-PULMONARY—																																							
BONES AND JOINTS	Head— (Incl. Middle Ear) ...	7	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	7
	Trunk—																																						
	Ribs and Sternum ...	8	...	...	...	...	...	...	...	...	...	1	...	1	1	1	2	...	...	...	3	1	4	...	...	...	...	...	...	...	...	...	...	...	...	5	2	7	8
	Spine ...	9	...	...	...	4	7	11	...	3	3	1	4	5	7	3	10	2	2	4	4	9	13	3	3	6	2	1	3	2	1	3	...	1	1	25	34	59	9
	Arm—																																						
	Shoulder ...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	...	...	...	...	...	...	1	1	2	10
	Scapula ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
	Humerus ...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	12
	Elbow ...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	...	1	1	...	...	...	...	...	...	...	...	...	2	1	3	13
	Radius ...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
	Ulna ...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
	Hand and Wrist ...	16	...	1	1	1	...	1	...	2	2	...	...	...	2	1	3	...	...	...	...	...	...	1	...	1	1	1	2	...	...	...	...	...	...	5	5	10	16
	Leg—																																						
	Hip and Pelvis ...	17	...	...	...	2	3	5	8	3	11	4	1	5	6	5	11	...	...	...	3	3	6	...	1	1	...	1	1	...	1	1	1	1	2	24	19	43	17
	Femur ...	18	...	...	...	2	...	2	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4	18
	Knee ...	19	...	...	...	1	2	3	1	4	5	...	3	3	...	2	2	...	1	1	...	1	1	1	...	1	1	...	1	1	...	1	...	1	1	5	14	19	19
	Tibia ...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	20
	Fibula ...	21	...	...	...	1	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	21
	Foot and Ankle ...	22	...	...	...	1	1	2	...	...	...	...	2	2	...	2	2	...	1	1	...	1	1	...	...	...	...	...	...	1	...	1	1	...	1	3	7	10	22
	Two or more different Joints ...	23	...	...	...	...	...	...	...	1	1	1	1	2	...	...	...	...	...	...	1	...	1	...	...	...	1	1	2	1	...	1	...	...	...	4	3	7	23
	Not classified ...	24	...	...	...	...	...	...	...	1	1	1	...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	3	4	24
ABDOMINAL	Intestines ...	25	...	...	...	...	...	...	...	...	...	1	...	1	...	2	2	1	2	3	1	1	2	1	...	1	...	2	2	...	...	...	...	...	...	4	7	11	25
	Peritoneum ...	26	2	1	3	6	7	13	5	2	7	6	5	11	6	8	14	2	7	9	4	6	10	1	5	6	2	...	2	...	1	1	1	...	1	35	42	77	26
	Mesenteric Glands ...	27	2	1	3	3	...	3	3	1	4	2	2	4	...	5	5	...	...	...	1	2	3	...	1	1	...	...	...	...	...	...	...	...	...	11	12	23	27
GENITO-URINARY	Bladder ...	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	28
	Fallopian Tube ...	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	2	...	1	1	...	...	...	...	...	...	...	4	4	29
	Kidney ...	30	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	3	1	4	...	2	2	3	...	3	...	...	...	...	...	...	7	3	10	30
	Prostate ...	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31
	Suprarenal ...	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32
	Testicle and Epididymis	33	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	2	...	2	4	...	4	3	...	3	1	...	1	...	...	...	...	...	...	13	...	13	33
	Not classified (two or more) ...	34	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	34
MENINGITIS (Brain) ...		35	6	8	14	10	7	17	7	5	12	4	4	8	1	4	5	...	1	1	...	1	1	2	1	3	...	...	...	...	...	...	1	...	1	31	31	62	35
MILIARY (Generalised) ...		36	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4	36
SKIN (Lupus) ...		37	...	...	...	...	...	...	...	3	3	2	1	3	1	1	2	...	6	6	1	8	9	1	4	5	2	4	6	1	...	1	1	1	2	9	28	37	37
PERIPHERAL GLANDS	Axillary ...	38	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	2	38
	Cervical...	39	...	...	...	28	19	47	49	40	89	33	41	74	9	27	36	11	14	25	12	26	38	5	9	14	4	2	6	1	1	2	...	1	1	152	180	332	39
	Inguinal ...	40	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	2	2	4	40
MISCELLANEOUS ...		41	...	1	1	1	...	1	2	3	5	2	...	2	...	...	...	2	1	3	1	2	3	...	2	2	1	...	1	...	...	...	...	...	...	9	9	18	41
NON-PULMONARY TOTAL ...		42	10	12	22	60	46	106	79	69	148	61	65	126	36	63	99	22	36	58	43	65	108	19	32	51	18	15	33	7	6	13	5	5	10	360	414	† 774	42
GRAND TOTAL ...		43	11	14	25	63	55	118	83	80	163	69	79	148	83	147	230	121	171	292	204	228	432	175	119	294	157	65	222	80	39	119	30	16	46	1076	1013	† 2089	43

* Combined cases are included in pulmonary total, but are shown separately for purpose of reference.

† Corrected figures after deducting 38 pulmonary and 51 non-pulmonary cases notified in error by practitioners.

TABLE D.

ADMINISTRATIVE COUNTY OF LANCASTER.

Public Health (Tuberculosis) Regulations, 1930.

MALE AND FEMALE NOTIFIED CASES IN THE ADMINISTRATIVE COUNTY DURING THE YEARS 1914 TO 1934.

YEAR.	Sex.	PULMONARY TUBERCULOSIS.													NON-PULMONARY TUBERCULOSIS.												
		0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total.	Total* M. & F.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and over	Total.	Total* M. & F
1914 ...	M	6	40	80	83	112	172	329	315	240	107	23	1507		43	111	131	95	77	36	47	23	20	14	3	600	
	F	*3*	*32*	*115*	*107*	*140*	*181*	*336*	*225*	*107*	*47*	*20*	*1313*	2820	*37*	*88*	*98*	*89*	*77*	*44*	*58*	*27*	*12*	*6*	*4*	*540*	1140
1915 ...	M	5	47	97	79	127	138	305	303	235	117	34	1487		39	109	113	93	61	46	50	29	14	5	3	562	
	F	*5*	*27*	*96*	*111*	*152*	*191*	*383*	*239*	*100*	*60*	*21*	*1385*	2872	*26*	*88*	*107*	*88*	*84*	*53*	*61*	*33*	*15*	*7*	*4*	*566*	1128
1916 ...	M	1	31	71	77	121	157	331	296	190	96	36	1407		20	127	135	99	65	42	47	34	12	13	5	599	
	F	*2*	*24*	*81*	*96*	*165*	*186*	*345*	*220*	*98*	*52*	*13*	*1282*	2689	*8*	*68*	*122*	*114*	*85*	*46*	*65*	*41*	*19*	*11*	*2*	*581*	1180
1917 ...	M	4	20	77	62	113	104	262	268	190	90	30	1220		21	116	109	105	61	23	42	30	8	9	1	525	
	F	*2*	*22*	*90*	*100*	*129*	*155*	*296*	*185*	*107*	*50*	*19*	*1155*	2375	*7*	*79*	*97*	*98*	*89*	*59*	*49*	*25*	*23*	*6*	*5*	*537*	1062
1918 ...	M	3	35	55	59	140	108	300	317	232	98	28	1375		14	75	103	65	60	19	29	16	14	7	2	404	
	F	*1*	*24*	*69*	*74*	*139*	*166*	*297*	*207*	*117*	*52*	*13*	*1159*	2534	*10*	*75*	*84*	*92*	*80*	*46*	*46*	*29*	*9*	*6*	*4*	*481*	885
1919 ...	M	2	22	53	55	94	107	238	212	165	91	17	1056		13	50	97	80	53	26	31	22	19	12	4	407	
	F	*5*	*14*	*54*	*80*	*126*	*161*	*261*	*184*	*99*	*41*	*24*	*1049*	2105	*10*	*59*	*98*	*76*	*61*	*43*	*41*	*29*	*11*	*7*	*5*	*440*	847
1920 ...	M	2	24	56	63	94	120	281	249	160	90	14	1153		31	62	107	108	68	26	35	23	16	11	5	492	
	F	*2*	*20*	*53*	*71*	*115*	*122*	*264*	*147*	*84*	*36*	*17*	*931*	2084	*12*	*66*	*86*	*78*	*62*	*46*	*52*	*34*	*23*	*16*	*1*	*476*	968
1921 ...	M	1	17	43	47	94	133	222	225	162	84	19	1047		12	60	110	84	53	32	41	23	17	6	4	442	
	F	...	*12*	*53*	*77*	*132*	*160*	*255*	*156*	*82*	*50*	*20*	*997*	2044	*15*	*62*	*89*	*81*	*65*	*41*	*53*	*15*	*21*	*9*	*6*	*457*	899
1922 ...	M	3	16	38	47	83	120	227	190	148	99	27	998		18	101	111	79	55	37	39	22	13	7	3	485	
	F	*4*	*15*	*45*	*57*	*135*	*135*	*202*	*146*	*61*	*42*	*23*	*865*	1863	*13*	*77*	*80*	*95*	*61*	*45*	*50*	*24*	*14*	*7*	*5*	*471*	956
1923 ...	M	2	10	41	43	82	132	236	207	147	94	13	1007		18	115	134	105	75	35	45	22	14	15	6	584	
	F	*1*	*14*	*43*	*60*	*115*	*149*	*251*	*149*	*83*	*49*	*16*	*930*	1937	*14*	*103*	*110*	*107*	*68*	*60*	*64*	*31*	*28*	*14*	*5*	*604*	1188
1924 ...	M	...	27	37	52	105	110	203	199	197	97	18	1045		19	123	92	92	95	35	43	25	17	12	3	556	
	F	*3*	*12*	*29*	*55*	*144*	*139*	*223*	*169*	*94*	*49*	*10*	*927*	1972	*6*	*99*	*87*	*94*	*80*	*55*	*72*	*30*	*17*	*11*	*13*	*564*	1120
1925 ...	M	...	22	32	38	81	115	212	200	192	74	24	990		17	108	106	73	58	37	53	26	15	12	5	510	
	F	*3*	*10*	*24*	*44*	*144*	*153*	*198*	*136*	*85*	*34*	*25*	*856*	1846	*9*	*86*	*84*	*91*	*82*	*41*	*57*	*33*	*18*	*10*	*6*	*517*	1027
1926 ...	M	1	9	27	40	91	113	210	198	158	110	23	980		10	90	97	76	75	29	35	32	16	7	3	470	
	F	*2*	*12*	*41*	*47*	*114*	*169*	*224*	*120*	*68*	*38*	*13*	*848*	1828	*19*	*83*	*94*	*51*	*67*	*56*	*51*	*34*	*17*	*6*	*5*	*483*	953
1927 ...	M	1	11	47	39	115	111	197	187	185	85	19	997		12	101	131	87	66	38	40	18	13	4	7	517	
	F	...	*13*	*37*	*49*	*129*	*128*	*195*	*113*	*71*	*51*	*11*	*797*	1794	*15*	*84*	*95*	*81*	*61*	*47*	*75*	*33*	*20*	*11*	*6*	*528*	1045
1928 ...	M	1	7	31	20	70	106	187	163	176	82	27	870		16	82	114	66	67	43	40	15	14	10	7	474	
	F	...	*6*	*33*	*32*	*126*	*147*	*195*	*125*	*62*	*44*	*20*	*790*	1660	*13*	*69*	*100*	*70*	*56*	*63*	*50*	*27*	*21*	*8*	*5*	*482*	956
1929 ...	M	4	7	32	17	80	99	160	180	165	76	23	843		17	98	99	67	52	37	40	22	16	7	5	460	
	F	...	*7*	*18*	*23*	*111*	*130*	*186*	*99*	*53*	*28*	*19*	*674*	1517	*3*	*65*	*92*	*51*	*54*	*48*	*63*	*36*	*22*	*15*	*4*	*453*	913
1930 ...	M	1	5	14	27	66	106	189	174	159	82	22	845		6	78	105	69	67	28	45	18	12	12	7	447	
	F	...	*3*	*13*	*29*	*104*	*122*	*186*	*107*	*61*	*37*	*20*	*682*	1527	*12*	*67*	*100*	*80*	*63*	*63*	*71*	*35*	*28*	*13*	*3*	*535*	982
1931 ...	M	2	8	15	18	75	118	153	159	161	89	25	823		13	67	78	63	63	34	40	15	20	10	7	410	
	F	...	*7*	*10*	*27*	*99*	*120*	*149*	*109*	*57*	*38*	*21*	*637*	1460	*8*	*55*	*77*	*62*	*69*	*35*	*55*	*37*	*16*	*12*	*6*	*452*	862
1932 ...	M	1	2	14	20	73	105	183	146	142	108	20	814		7	67	70	54	38	41	34	20	22	17	6	376	
	F	...	*3*	*19*	*32*	*97*	*147*	*160*	*92*	*58*	*41*	*14*	*663*	1477	*7*	*43*	*86*	*70*	*63*	*53*	*63*	*24*	*19*	*15*	*6*	*449*	825
1933 ...	M	2	4	10	19	70	84	186	171	155	85	27	813		10	94	76	41	36	34	41	23	10	13	5	383	
	F	...	*1*	[illegible]	[illegible]	*85*	*101*	*204*	*102*	*61*	*29*	*21*	*649*	1453	*1*	*65*	*69*	*70*	*40*	*37*	*60*	*32*	*9*	*6*	*8*	*397*	780
1934 ...	M	1	3	4	8	47	99	161	156	139	73	25	716		16	60	73	61	36	22	43	19	18	7	5	360	
	F	*2*	*9*	*11*	*14*	*84*	*135*	*163*	*87*	*50*	*33*	*11*	*599*	1315	*12*	*46*	*69*	*65*	*63*	*36*	*65*	*32*	*15*	*6*	*5*	*414*	774

* Corrected figures from 1922 after deducting the following cases found to be non-tuberculous and notifications cancelled:— 1922: 14 pulmonary, 12 non-pulmonary; 1923: 33 pulmonary, 31 non-pulmonary; 1924: 57 pulmonary, 38 non-pulmonary; 1925: 83 pulmonary, 49 non-pulmonary; 1926: 61 pulmonary, 41 non-pulmonary; 1927: 68 pulmonary, 51 non-pulmonary; 1928: 63 pulmonary, 52 non-pulmonary; 1929: 61 pulmonary, 44 non-pulmonary; 1930: 63 pulmonary, 55 non-pulmonary; 1931: 38 pulmonary, 49 non-pulmonary; 1932: 40 pulmonary, 45 non-pulmonary; 1933: 48 pulmonary, 51 non-pulmonary; and 1934: 38 pulmonary, 51 non-pulmonary.

APPENDIX II.

NOTIFICATION OF TUBERCULOSIS CASES.

Since 1st February, 1913, tuberculosis—both pulmonary and other forms—has been compulsorily notifiable under the Public Health (Tuberculosis) Regulations.

Tables B and C, here inserted, analyse the notifications received, giving the part of the body affected and the age-groups.

Table D, also inserted, compares the male and female notifications since 1914.

TABLE 37.—*Deaths of 238 persons notified as suffering from pulmonary tuberculosis in 1934 which took place within three months of the date of notification.*

Period between date of case notification and death.	Certified cause of death.			Total.
	Pulmonary.		Non-pulmonary	
	Primary.	Secondary.		
Under 1 week	62	1	13	76
1 to 2 weeks	17	—	2	19
2 to 3 weeks	16	—	1	17
3 to 4 weeks	23	—	2	25
1 to 2 months	54	1	3	58
2 to 3 months	40	1	2	43
Total under 3 months ...	212	3	23	238
	215			

Included in the above table are 48 deaths which occurred outside the County area.

In addition to the foregoing 238 deaths which occurred within three months of notification, in 11 instances (7 pulmonary and 4 non-pulmonary) death took place *before* the actual receipt of the notification, against 25 (12 pulmonary and 13 non-pulmonary) in the preceding year.

TABLE 38.—*Actual number of deaths from pulmonary and non-pulmonary tuberculosis since 1918 not previously notified under the Public Health (Tuberculosis) Regulations.*

Year.	Non-notified fatal cases.		
	Pulmonary tuberculosis.	Non-pulmonary tuberculosis.	Total.
1918	303	137	440
1919	221	104	325
1920	177	122	299
1921	135	96	231
1922	105	83	188
1923	85	74	159
1924	64	65	129
1925	67	57	124
1926	58	32	90
1927	54	42	96
1928	56	51	107
1929	62	61	123
1930	46	61	107
1931	61	51	112
1932	37	28	65
1933	45	31	76
1934	**35**	**46**	**81**

The 81 deaths in 1934 of cases not previously notified under the Regulations are further analysed below :—

TABLE 39.

	Cause of death.			Total.
	Pulmonary.		Non-pulmonary.	
	Primary.	Secondary.		
Deaths of persons at private addresses	26	1	27	54
Deaths in County mental hospitals of persons belonging to County area ...	1	—	—	1
Deaths in Public Assistance hospitals of persons belonging to County area ...	3	1	7	11
Deaths in other public institutions of persons belonging to County area...	2	1	12	15
	32	3		
Total	35		46	81

During 1934, 122 pulmonary and 60 non-pulmonary deaths occurred outside the County area of persons usually residing in the Administrative County. Of these, 114 pulmonary and 60 non-pulmonary occurred in public institutions. In 50 instances no case notification could be traced. These are not included in Table 39.

N.B.—The tables mentioned in Appendix II. have been prepared in the County public health department.

Appendix III.

Census of Tuberculous Cases on the dispensary registers on the 31st December, 1934 (inclusive of 911 patients in sanatoria and hospitals).

Dispensary area.	Sex.	Number of cases under supervision on 31–12–34.							Number of doubtful cases on 31-12-34.
		Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.	Number of cases per 1,000 of population:		
		Under 15 years of age.	15 years and over.	Under 15 years of age.	15 years and over.		Pulm.	Non-pul.	
No. 1	M.	5	187	105	120				
	F.	7	169	88	147	828	1·49	1·86	9
No. 2	M.	7	321	87	143				
	F.	10	270	111	178	1,127	1·82	1·55	4
No. 3	M.	17	491	116	177				
	F.	7	373	86	218	1,485	2·41	1·62	4
No. 4	M.	11	502	112	183				
	F.	13	383	116	229	1,549	2·51	1·76	—
No. 5	M.	14	357	118	91				
	F.	17	256	89	110	1,052	2·44	1·54	4
Furness ...	M.	12	68	14	30				
	F.	12	65	21	30	252	4·11	2·48	2
Fylde	M.	5	99	61	37				
	F.	6	93	64	51	416	2·36	2·47	—
Wigan County ...	M.	22	162	87	88				
	F.	35	149	73	122	738	3·36	3·38	4
TOTAL	M.	93	2,187	700	869	7,447	2·29	1·82	27
	F.	107	1,758	648	1,085				
		4,145		3,302			4·12		

The populations of the dispensary areas are :—Area No. 1, 246,683 ; Area No. 2, 333,881 ; Area No. 3, 367,448 ; Area No. 4, 361,900 ; Area No. 5, 263,686 ; Furness Area, 38,174 ; Fylde Area, 85,967 ; Wigan County Area, 109,351 ; Total for County, 1,807,090.

Appendix III. (contd.).

Analysis of Cases on the dispensary registers on the 31st December, 1934.

(a) PULMONARY TUBERCULOSIS.

Age-groups.	Sex.	T.B. minus.		T.B. plus 1.		T.B. plus 2.		T.B. plus 3.		Total.	
		Active.	Quies.	Active.	Quies.	Active.	Quies.	Active.	Quies.	Active.	Quies.
0–5 years ...	M.	1	1	—	—	—	—	—	—	1	1
	F.	4	—	—	—	—	—	—	—	4	—
5–15 years ...	M.	31	58	—	—	2	—	—	—	33	58
	F.	36	55	2	—	5	1	3	1	46	57
15–25 years ...	M.	58	117	23	24	105	37	26	4	212	182
	F.	66	132	35	22	191	29	28	3	320	186
25–35 years ...	M.	65	100	48	41	185	74	24	8	322	223
	F.	67	110	52	35	203	70	23	4	345	219
35–45 years ...	M.	41	96	46	44	164	62	29	8	280	210
	F.	43	64	33	28	106	44	13	6	195	142
45–55 years ...	M.	61	76	34	44	147	43	23	4	265	167
	F.	29	55	14	15	62	33	6	2	111	105
55–65 years ...	M.	35	50	14	16	87	33	19	2	155	101
	F.	18	24	4	12	29	11	4	2	55	49
65 and over ...	M.	12	11	3	3	28	9	2	2	45	25
	F.	6	8	2	1	7	5	2	—	17	14
All Ages ...	M.	304	509	168	172	718	258	123	28	1,313	967
	F.	269	448	142	113	603	193	79	18	1,093	772
Grand Total ...		1,530		595		1,772		248		4,145	

(b) NON-PULMONARY TUBERCULOSIS.

Age-groups.	Sex.	Bones and joints (excluding spine).		Spine.		Abdomen.		Other organs.		Peripheral glands.		Skin.		Total.	
		Act.	Quies	Act.	Quies	Act.	Quies	Act.	Quies	Act.	Quies	Act.	Quies	Act.	Quies
0–5 years ...	M.	12	13	9	2	3	2	—	—	27	28	—	—	51	45
	F.	8	7	10	—	5	2	—	1	11	21	—	—	34	31
5–15 years ...	M.	59	50	19	23	17	56	—	4	87	255	15	19	197	407
	F.	34	62	21	20	11	37	3	2	86	281	15	11	170	413
15–25 years ...	M.	41	65	19	18	9	28	7	8	30	131	26	24	132	274
	F.	18	50	13	10	16	38	5	2	44	170	25	20	121	290
25–35 years ...	M.	30	41	15	14	5	6	15	13	20	43	21	10	106	127
	F.	26	28	21	16	17	22	8	9	35	97	35	15	142	187
35–45 years ...	M.	15	16	11	7	2	3	10	11	6	13	14	6	58	56
	F.	7	18	6	10	5	10	4	11	9	43	23	13	54	105
45–55 years ...	M.	6	14	6	7	3	—	6	4	2	7	6	4	29	36
	F.	11	14	5	2	4	3	4	2	7	10	21	13	52	44
55–65 years ...	M.	4	7	2	2	—	—	1	9	4	2	6	—	17	20
	F.	3	8	3	3	—	3	—	2	2	14	16	9	24	39
65 and over ...	M.	3	5	—	—	—	—	—	1	—	2	1	2	4	10
	F.	3	6	—	2	—	1	1	—	2	4	8	—	14	13
All Ages ...	M.	170	211	81	73	39	95	39	50	176	481	89	65	594	975
	F.	110	193	79	63	58	116	25	29	196	640	143	81	611	1,122
Grand Total...		684		296		308		143		1,493		378		3,302	

APPENDIX IV.

HOUSING CONDITIONS of patients in each dispensary area at the end of 1934.

	Pulmonary cases considered infectious.		Pulmonary cases considered not infectious.		Non-pulmonary cases.	
	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.	Under 15 years.	15 years & over.
Patients occupying a separate bedroom :						
Area No. 1	—	150	1	78	38	100
Area No. 2	2	185	2	125	32	104
Area No. 3	1	280	6	172	22	100
Area No. 4	2	296	8	283	36	105
Area No. 5	1	210	9	116	27	54
Furness Area ...	—	36	4	49	10	28
Fylde Area ...	—	47	5	57	16	21
Wigan County Area	—	83	9	49	20	37
TOTAL	6	1,287	44	929	201	549
Patients occupying a separate bed but not a separate bedroom :						
Area No. 1	—	27	6	20	85	25
Area No. 2	1	122	8	68	89	77
Area No. 3	—	150	7	112	96	103
Area No. 4	1	50	9	95	91	81
Area No. 5	—	75	8	54	84	47
Furness Area ...	—	10	16	12	22	14
Fylde Area ...	—	21	4	28	55	27
Wigan County Area	3	45	19	51	46	44
TOTAL	5	500	77	440	568	418
Patients not occupying a separate bed :	*	†				
Area No. 1	—	11	5	70	70	142
Area No. 2	—	23	4	68	77	140
Area No. 3	—	19	10	131	84	192
Area No. 4	1	8	3	153	101	226
Area No. 5	1	37	12	121	96	100
Furness Area ...	—	3	4	23	3	18
Fylde Area ...	—	3	2	36	54	40
Wigan County Area	—	4	26	79	94	129
TOTAL	2	108	66	681	579	987
GRAND TOTAL ...	13	1,895	187	2,050	1,348	1,954

* These children were in sanatoria or pulmonary hospitals at the end of 1934.

† Of the adult infective patients without a separate bed, there were in sanatoria or pulmonary hospitals at the end of 1934 the following patients :—Area No. 1, 2 ; Area No. 2, 3 ; Area No. 3, 4 ; Area No. 4, 3 ; Area No. 5, 7 ; Fylde Area, 1 ; and Wigan County Area, 2 ; Total 22.

APPENDIX V.

Return showing the WORK OF THE DISPENSARIES during the year 1934.

(Tables A and B of Memorandum 37/ T (Revised) of the Ministry of Health).

DIAGNOSIS.	PULMONARY.				NON-PULMONARY.				TOTAL.				GRAND TOTAL.
	Adults.		Children.		Adults.		Children.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
A.—NEW CASES examined during the year (excluding contacts):													
(*a*) Definitely tuberculous ...	599	427	15	26	120	202	164	142	719	629	179	168	1,695
(*b*) Diagnosis not completed	—	—	—	—	—	—	—	—	6	10	5	3	24
(*c*) Non-tuberculous... ...	—	—	—	—	—	—	—	—	1,027	941	396	335	2,699
B.—CONTACTS examined during the year:													
(*a*) Definitely tuberculous ...	8	22	—	1	—	2	3	1	8	24	3	2	37
(*b*) Diagnosis not completed	—	—	—	—	—	—	—	—	1	1	—	2	4
(*c*) Non-tuberculous... ...	—	—	—	—	—	—	—	—	179	292	182	214	867
C.—CASES written off the dispensary register as:													
(*a*) Recovered...	93	108	11	10	136	173	80	92	229	281	91	102	703
(*b*) Non-tuberculous (including any such cases previously diagnosed and entered on the dispensary register as tuberculous)	—	—	—	—	—	—	—	—	1,227	1,257	585	556	3,625
D.—NUMBER OF CASES on dispensary register on 31st December, 1934:													
(*a*) Definitely tuberculous ...	2,187	1,758	93	107	869	1,085	700	648	3,056	2,843	793	755	7,447
(*b*) Diagnosis not completed	—	—	—	—	—	—	—	—	7	10	5	5	27

1. Number of cases on dispensary register on 1st January, 1934	7,583	8. Number of visits by tuberculosis officers to homes (including personal consultations)	5,091
2. Number of cases transferred from other areas and cases returned after discharge under Head 3 in previous years	241	9. Number of visits by nurses or health visitors to homes for dispensary purposes	41,161
3. Number of cases transferred to other areas, cases not desiring further assistance under the scheme, and cases "lost sight of"	527	10. Number of (*a*) Specimens of sputum, etc., examined (*b*) X-ray examinations made in connection with dispensary work	5,316 10,137
4. Cases written off during the year as dead (all causes)	821	11. Number of "recovered" cases restored to dispensary register, and included in A(*a*) and A(*b*) above	40
5. Number of attendances at the dispensary (including contacts)	23,575	12. Number of "T.B. plus" cases on dispensary register on 31st December ...	2,615
6. Number of insured persons under domiciliary treatment on the 31st December	1,338	13. Number of dispensaries for the treatment of tuberculosis (excluding centres used only for special forms of treatment) :—	
7. Number of consultations with medical practitioners :— (*a*) Personal ... ... (*b*) Other	700 5,547	Provided by the Council ... ... Provided by voluntary bodies	24 —

APPENDIX VI.

Return showing the extent of RESIDENTIAL TREATMENT AND OBSERVATION during the year 1934 in institutions (other than Poor Law institutions) approved for the treatment of tuberculosis.

(Table D of Memorandum 37/T (Revised) of the Ministry of Health).

			In institutions on Jan. 1.	Admitted during the year.	Discharged during the year.	Died in the institutions.	In institutions on Dec. 31.
Number of doubtfully tuberculous cases admitted for observation	Adults	M.	9	43	46	2	4
		F.	6	31	34	1	2
		Children.	9	34	35	1	7
		Total...	24	108	115	4	13
Number of patients suffering from pulmonary tuberculosis	Adults	M.	343	673	549	127	340
		F.	224	508	373	90	269
		Children.	34	45	39	5	35
		Total...	601	1,226	961	222	644
Number of patients suffering from non-pulmonary tuberculosis	Adults	M.	56	125	112	10	59
		F.	45	161	138	7	61
		Children.	149	174	177	12	134
		Total...	250	460	427	29	254
GRAND TOTAL			875	1,794	1,503	255	911

APPENDIX VII.

Return showing the extent of RESIDENTIAL TREATMENT provided during the year 1934 IN POOR LAW INSTITUTIONS for persons chargeable to the Council.

(Table E of Memorandum 37/T (Revised) of the Ministry of Health).

			In institutions on Jan. 1.	Admitted during the year.	Discharged during the year.	Died in the institutions.	In institutions on Dec. 31.
Number of patients suffering from pulmonary tuberculosis	Adults	M.	17	84	46	40	15
		F.	8	64	37	23	12
		Children.	1	4	2	3	—
		Total...	26	152	85	66	27
Number of patients suffering from non-pulmonary tuberculosis ...	Adults	M.	7	20	16	6	5
		F.	7	12	10	4	5
		Children.	10	35	27	13	5
		Total...	24	67	53	23	15
GRAND TOTAL			50	219	138	89	42

APPENDIX VIII.

Return showing the results of OBSERVATION OF DOUBTFULLY TUBERCULOUS CASES discharged during the year 1934 from institutions approved for the treatment of tuberculosis.

(Table F of Memorandum 37/T (Revised) of the Ministry of Health).

Diagnosis on discharge from observation.	For pulmonary tuberculosis.						For non-pulmonary tuberculosis.						TOTALS.		
	Stay under 4 weeks.			Stay over 4 weeks.			Stay under 4 weeks.			Stay over 4 weeks.					
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.
Tuberculous	5	2	—	4	4	6	1	4	4	7	3	10	17	13	20
Non-tuberculous	6	2	—	13	8	7	2	1	—	6	4	4	27	15	11
Doubtful	1	2	—	—	2	—	—	1	1	1	1	3	2	6	4
Died	—	—	1*	—	1**	—	—	—	—	2†	—	—	2	1	1
Totals ...	12	6	1	17	15	13	3	6	5	16	8	17	48	35	36

* Diagnosis : Streptococcal broncho-pneumonia.
** ,, Pleurisy and myocardial degeneration.
† ,, (1) Acute septic arthritis and amyloid disease ;
(2) Perinephric and intrahepatic abscesses.

APPENDIX IX.

Return showing the IMMEDIATE RESULTS OF TREATMENT of definitely tuberculous patients discharged during the year 1934 from institutions approved for the treatment of tuberculosis.

(This table is based on Table G of Memorandum 37/T (Revised) of the Ministry of Health).

Classification on admission to the institution.		Condition at time of discharge.	Duration of residential treatment in the institution.															GRAND TOTALS.
			Under 28 days.			1–3 months.			3–6 months.			6–12 months.			More than 12 months.			
			M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
PULMONARY TUBERCULOSIS.	T.B. minus.	Quiescent . .	2	—	—	7	3	1	16	10	2	13	12	7	2	2	8	85
		Improved . .	2	3	5	22	12	1	40	20	1	10	6	1	2	1	—	126
		N. M. I. . .	7	6	2	8	3	—	2	4	1	4	2	—	—	—	1	40
		Died . .	1	1	2	4	—	—	2	2	—	—	1	1	—	1	—	15
	T.B. plus 1.	Quiescent . .	—	—	—	—	—	—	6	—	—	3	6	—	5	7	—	27
		Improved . .	—	—	—	2	4	—	9	8	—	6	6	—	3	2	—	40
		N. M. I. . .	1	3	—	3	1	—	—	1	—	—	—	—	1	2	—	12
		Died . .	1	1	—	2	—	—	1	—	—	—	—	—	—	—	—	5
	T.B. plus 2.	Quiescent . .	—	—	—	—	3	—	3	11	1	19	9	—	11	10	3	70
		Improved . .	3	2	—	37	17	—	71	37	—	79	43	2	28	12	1	332
		N. M. I. . .	14	8	—	16	17	1	13	26	—	10	7	—	8	2	—	122
		Died . .	20	11	1	27	14	—	19	9	—	9	12	—	4	2	—	128
	T.B. plus 3.	Quiescent . .	1	—	—	1	—	—	1	1	—	—	1	—	1	—	—	6
		Improved . .	—	—	—	2	7	—	13	7	—	8	5	—	9	1	—	52
		N. M. I. . .	5	4	—	12	7	—	2	6	—	6	5	1	—	1	—	49
		Died . .	10	16	—	15	13	1	4	5	—	4	1	—	4	1	—	74
TOTALS (pulmonary) . . .			67	55	10	158	101	4	202	147	5	171	116	12	78	44	13	1,183
NON-PULMONARY TUBERCULOSIS.	Bones and joints.	Quiescent . .	1	5	—	5	2	5	3	4	13	8	11	18	2	5	27	109
		Improved . .	7	7	3	6	5	3	3	6	3	5	6	4	10	1	6	75
		N. M. I. . .	3	3	4	—	4	4	1	2	—	—	—	1	1	—	1	24
		Died . .	—	1	—	1	1	—	—	3	1	1	—	2	3	—	4	17
	Abdominal.	Quiescent . .	1	1	1	—	2	2	6	4	1	1	—	3	—	—	1	23
		Improved . .	—	2	1	1	4	3	3	—	7	—	1	2	—	—	1	25
		N. M. I. . .	1	4	3	1	—	—	—	—	—	—	—	—	—	—	—	9
		Died . .	1	—	1	—	—	1	1	—	—	—	—	—	—	—	1	5
	Other organs.	Quiescent . .	2	1	—	3	—	1	1	—	2	—	—	—	—	—	—	10
		Improved . .	7	10	—	7	5	4	3	2	1	1	—	—	—	—	—	40
		N. M. I. . .	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	3
		Died . .	—	—	2	1	1	—	2	—	—	—	—	—	—	—	—	6
	Peripheral glands.	Quiescent . .	5	7	5	3	5	10	—	2	6	—	1	5	1	—	1	51
		Improved . .	6	20	15	—	2	2	—	—	5	—	—	—	—	—	—	50
		N. M. I. . .	2	3	3	—	—	—	—	—	—	—	—	—	—	—	—	8
		Died . .	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
TOTALS (non-pulmonary) . .			36	65	38	30	31	35	23	23	39	16	20	35	17	6	42	456

N. M. I. = No material improvement. Died comprises deaths in the institution only.

APPENDIX X.

Definitions observed in CLASSIFYING CASES and recording results of Treatment (in accordance with Memorandum 37/T (Revised) of the Ministry of Health, extracts from which are quoted below).

CLASSIFICATION OF PATIENTS SUFFERING FROM TUBERCULOSIS.

For the purpose of the Annual Returns required under this Memorandum, and of the case records necessary to enable these returns to be completed, the following system of classification of cases and of recording results should be used :—

I.—All patients should be grouped according to their sex and age ; patients under 15 years of age should be classed as children, and those of 15 years and upwards as adults.

II.—Patients should then be classified according to the organs or parts affected as follows :—

(1) Pulmonary tuberculosis (including tuberculosis of the pleura or intrathoracic glands).

(2) Non-pulmonary tuberculosis.

Patients suffering from both pulmonary and non-pulmonary tuberculosis should be classified as pulmonary cases.

III.—Patients suffering from pulmonary tuberculosis should be divided into :—

Class T.B. minus, *viz.*, cases in which tubercle bacilli have never been demonstrated in the sputum, pleural fluid, fæces, etc., and

Class T.B. plus, *viz.*, cases in which tubercle bacilli have at any time been found. It should be noted that a patient originally in Class T.B. minus must be transferred to Class T.B. plus at any stage in the course of treatment if and when tubercle bacilli are found, while on the other hand a patient who is once placed in Class T.B. plus can never be included in Class T.B. minus. Class T.B. plus should be further sub-divided into three groups as follows :—

Group 1.—Cases with slight constitutional disturbance, if any ; *e.g.*, there should not be marked acceleration of pulse nor elevation of temperature except of very transient duration ; gastro-intestinal disturbance or emaciation, if present, should not be excessive.

The obvious physical signs should be of very limited extent as follows : either present in one lobe only, and in the case of an apical lesion of one upper lobe, not extending below the second rib in front or not exceeding an equivalent area in any one lobe ; or where these physical signs are present in more than one lobe, they should be limited to the apices of the upper lobes, and should not extend below the clavicle and the spine of the scapula.

No complication (tuberculous or other) of prognostic gravity should be present. A small area of dry pleurisy should not exclude a case from this group.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration, with marked impairment of function, either local or general, and with little or no prospect of recovery.

All cases with grave complications (*e.g.*, diabetes, tuberculosis of intestine, etc.), whether those complications are tuberculous or not, should be classified in this group.

Group 2.—All cases which cannot be placed in Groups 1 and 3.

APPENDIX X. (contd.).

IV.—Patients suffering from non-pulmonary tuberculosis should be classified according to the site of the lesion as follows :—

(1) Tuberculosis of bones and joints.

(2) Abdominal tuberculosis (*i.e.*, tuberculosis of peritoneum, intestines or mesentric glands).

(3) Tuberculosis of other organs.

(4) Tuberculosis of peripheral glands.

Patients suffering from multiple lesions should be classified in one sub-group only, *viz.*, in that applicable to the case which stands highest in the immediately preceding list.

RESULTS OF TREATMENT.

The following terms should be used to describe the results of treatment :—

" QUIESCENT."—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which sputum, if present, is free from tubercle bacilli.

" ARRESTED."—Cases in which, if pulmonary, the disease has been " quiescent " for a period of at least two years, or, if non-pulmonary, the disease is " quiescent " and there is reason to believe that it is unlikely to recur.

" RECOVERED."—Cases in which arrest of the disease has been maintained for at least three years.

APPENDIX XI.

INSTITUTIONAL ACCOMMODATION.

Number of beds occupied by County patients undergoing residential treatment for pulmonary and non-pulmonary tuberculosis on the 31st December, 1934.

Institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
(*a*) *Institutions for pulmonary tuberculosis.*					
Aitken Sanatorium, near Bury	49	—	—	—	49
Chadderton Pulmonary Hospital, near Oldham ...	44	1	—	—	45
Eastby Sanatorium, near Skipton	—	9	—	2	11
East Lancashire Tuberculosis Colony, Barrowmore Hall, near Chester	40	—	1	—	41
Eccleston Hall Sanatorium, St. Helens	9	—	—	—	9
Elswick Sanatorium, near Kirkham	67	—	—	—	67
Halifax Sanatorium, Shelf	13	1	—	—	14
Heath Charnock Pulmonary Hospital, near Chorley...	34	—	—	—	34
Hefferston Grange Sanatorium, Weaverham, Cheshire	2	—	—	—	2
High Carley Sanatorium, near Ulverston	115	1	—	—	116
King Edward VII. Sanatorium, Midhurst, Sussex ...	1	—	—	—	1
Liverpool Sanatorium, Frodsham, Cheshire	1	—	—	—	1
Oubas House Children's Sanatorium, Ulverston ...	—	16	—	1	17
Papworth Village Settlement, Papworth Hall, Cambridge	1	—	—	—	1
Peel Hall Pulmonary Hospital, Little Hulton ...	56	1	—	—	57
Pemberton Pulmonary Hospital, Wigan	3	—	—	—	3
Rufford Pulmonary Hospital, near Ormskirk ...	46	3	—	—	49
Springfield Sanatorium, Rochdale	15	—	—	—	15
Westmorland Sanatorium, Meathop	15	—	—	—	15
Wilkinson Sanatorium, near Bolton	5	—	—	—	5
Withnell Pulmonary Hospital, near Chorley	44	—	—	—	44
Wolstenholme Pulmonary Hospital, Norden, Rochdale	17	—	—	—	17
Total	577	32	1	3	613
(*b*) *Training colonies.*					
British Legion Village, Preston Hall, Kent	1	—	—	—	1
Derwen Cripples' College, Oswestry	—	—	5	—	5
East Lancashire Tuberculosis Colony, Barrowmore Hall, near Chester	4	—	—	—	4
Papworth Village Settlement, Papworth Hall, Cambridge	4	—	1	—	5
Total	9	—	6	—	15
(*c*) *Institution with accommodation for combined tuberculosis.*					
Wrightington Hospital, near Wigan	22	3	—	—	25
(*d*) *Beds occupied by observation cases.*					
Eastby Sanatorium, near Skipton	—	2	—	—	2
Elswick Sanatorium, near Kirkham	1	—	—	—	1
High Carley Sanatorium, near Ulverston	1	—	—	—	1
Oubas House Children's Sanatorium, Ulverston ...	—	2	—	—	2
Withnell Pulmonary Hospital, near Chorley	2	—	—	—	2
Wrightington Hospital, near Wigan	—	—	2	3	5
	4	4	2	3	13

APPENDIX XI. (contd.).

Institution.	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		Total.
	Adults.	Children.	Adults.	Children.	
(*e*) *Institutions for non-pulmonary tuberculosis.*					
Blackburn Royal Infirmary	—	—	—	1	1
Ethel Hedley Hospital for Crippled Children, Windermere	—	—	—	1	1
Heatherwood Hospital, Ascot, Berks.	—	—	—	1	1
Liverpool Open-air Hospital for Children, Leasowe, Cheshire	—	—	15	22	37
Lord Mayor Treloar Cripples' Hospital, Alton, Hants.	—	—	—	1	1
Manchester Royal Infirmary	1	—	3	—	4
Preston Royal Infirmary	—	—	2	—	2
Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry	—	—	6	—	6
Royal Liverpool Children's Hospital—					
Heswall, Cheshire	—	—	—	7	7
Thingwall, Cheshire	—	—	—	1	1
Royal Manchester Children's Hospital, Pendlebury	—	—	—	1	1
Royal Southern Hospital, Liverpool	—	—	1	—	1
Warwickshire Orthopaedic Hospital for Children, Coleshill	—	—	—	5	5
Wrightington Hospital, near Wigan	—	—	86	91	177
Total	1	—	113	131	245
GRAND TOTAL	613	39	122	137	911
	652		259		

N.B.—The number of beds occupied fluctuates during the course of the year, there being a greater demand for beds in the summer than in the winter. In July, 1934, the beds occupied totalled 926, and in July, 1935, 1,018.

ADMINISTRATIVE COUNTY OF LANCASTER.

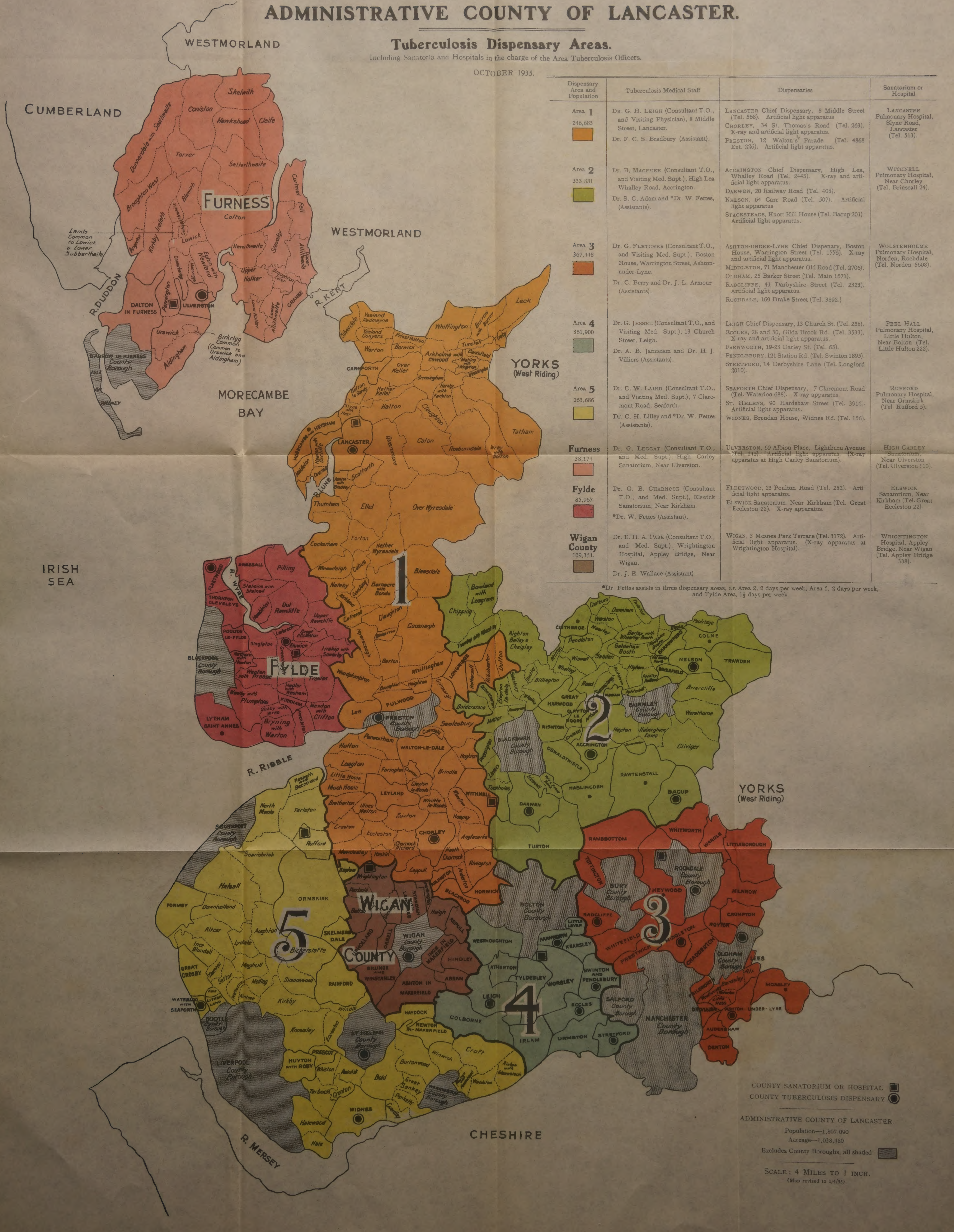
Tuberculosis Dispensary Areas.

Including Sanatoria and Hospitals in the charge of the Area Tuberculosis Officers.

OCTOBER 1935.

Dispensary Area and Population	Tuberculosis Medical Staff	Dispensaries	Sanatorium or Hospital
Area 1 246,683 🟧	Dr. G. H. Leigh (Consultant T.O., and Visiting Physician), 8 Middle Street, Lancaster. Dr. F. C. S. Bradbury (Assistant).	Lancaster Chief Dispensary, 8 Middle Street (Tel. 568). Artificial light apparatus Chorley, 34 St. Thomas's Road (Tel. 263). X-ray and artificial light apparatus. Preston, 12 Walton's Parade (Tel. 4868 Ext. 226). Artificial light apparatus.	Lancaster Pulmonary Hospital, Slyne Road, Lancaster (Tel. 513).
Area 2 333,881 🟩	Dr. B. Macphee (Consultant T.O., and Visiting Med. Supt.), High Lea Whalley Road, Accrington. Dr. S. C. Adam and *Dr. W. Fettes, (Assistants).	Accrington Chief Dispensary, High Lea, Whalley Road (Tel. 2443). X-ray and artificial light apparatus. Darwen, 20 Railway Road (Tel. 408). Nelson, 64 Carr Road (Tel. 507). Artificial light apparatus Stacksteads, Knott Hill House (Tel. Bacup 201). Artificial light apparatus.	Withnell Pulmonary Hospital, Near Chorley (Tel. Brinscall 24).
Area 3 367,448 🟧	Dr. G. Fletcher (Consultant T.O., and Visiting Med. Supt.), Boston House, Warrington Street, Ashton-under-Lyne. Dr. C. Berry and Dr. J. L. Armour (Assistants).	Ashton-under-Lyne Chief Dispenary, Boston House, Warrington Street (Tel. 1775). X-ray and artificial light apparatus. Middleton, 71 Manchester Old Road (Tel. 2706). Oldham, 25 Barker Street (Tel. Main 1671). Radcliffe, 41 Darbyshire Street (Tel. 2323). Artificial light apparatus. Rochdale, 169 Drake Street (Tel. 3892.)	Wolstenholme Pulmonary Hospital, Norden, Rochdale (Tel. Norden 5608).
Area 4 361,900 ▨	Dr. G. Jessel (Consultant T.O., and Visiting Med. Supt.), 13 Church Street, Leigh. Dr. A. B. Jamieson and Dr. H. J. Villiers (Assistants).	Leigh Chief Dispensary, 13 Church St. (Tel. 258). Eccles, 28 and 30, Gilda Brook Rd. (Tel. 3533). X-ray and artificial light apparatus. Farnworth, 19-23 Darley St. (Tel. 63). Pendlebury, 121 Station Rd. (Tel. Swinton 1895). Stretford, 14 Derbyshire Lane (Tel. Longford 2010).	Peel Hall Pulmonary Hospital, Little Hulton, Near Bolton (Tel. Little Hulton 222).
Area 5 263,686 🟨	Dr. C. W. Laird (Consultant T.O., and Visiting Med. Supt.), 7 Claremont Road, Seaforth. Dr. C. H. Lilley and *Dr. W. Fettes (Assistants).	Seaforth Chief Dispensary, 7 Claremont Road (Tel. Waterloo 688). X-ray apparatus. St. Helens, 90 Hardshaw Street (Tel. 3916). Artificial light apparatus. Widnes, Brendan House, Widnes Rd. (Tel. 156).	Rufford Pulmonary Hospital, Near Ormskirk (Tel. Rufford 5).
Furness 38,174 🟥	Dr. G. Leggat (Consultant T.O., and Med. Supt.), High Carley Sanatorium, Near Ulverston.	Ulverston, 69 Albion Place, Lightburn Avenue (Tel. 145). Artificial light apparatus. (X-ray apparatus at High Carley Sanatorium).	High Carley Sanatorium, Near Ulverston (Tel. Ulverston 110).
Fylde 85,967 🟥	Dr. G. B. Charnock (Consultant T.O., and Med. Supt.), Elswick Sanatorium, Near Kirkham *Dr. W. Fettes (Assistant).	Fleetwood, 23 Poulton Road (Tel. 282). Artificial light apparatus. Elswick Sanatorium, Near Kirkham (Tel. Great Eccleston 22). X-ray apparatus.	Elswick Sanatorium, Near Kirkham (Tel. Great Eccleston 22).
Wigan County 109,351. 🟫	Dr. E. H. A. Pask (Consultant T.O., and Med. Supt.), Wrightington Hospital, Appley Bridge, Near Wigan. Dr. J. E. Wallace (Assistant).	Wigan, 3 Mesnes Park Terrace (Tel. 3172). Artificial light apparatus. (X-ray apparatus at Wrightington Hospital).	Wrightington Hospital, Appley Bridge, Near Wigan (Tel. Appley Bridge 338).

*Dr. Fettes assists in three dispensary areas, *i.e.* Area 2, 2 days per week, Area 5, 2 days per week, and Fylde Area, 1½ days per week.



COUNTY SANATORIUM OR HOSPITAL ▣

COUNTY TUBERCULOSIS DISPENSARY ◉

ADMINISTRATIVE COUNTY OF LANCASTER

Population—1,807,090

Acreage—1,038,480

Excludes County Boroughs, all shaded ▨

SCALE: 4 MILES TO 1 INCH.

(Map revised to 1/4/35).